# Curriculum Vitae

*January 9th, 2023*

**Olga Ormandjieva, PhD, Eng.**

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# 1.  Profile

Experienced University professor and a licensed Software Engineer with a high potential to lead positive change and develop creative solutions. Solid software engineering background and extensive experience in teaching and research. Very resourceful and reliable. Team player who functions well independently; able to meet deadlines and the common objective.

## 1.1 Academic background

| | |
|---|---|
| 1998-2002 | PhD in Computer Science, Specialization: Software Measurement Computer Science & Software Engineering Department, Concordia University, Canada. Supervisor: Dr. V.S. Alagar Award: J W McConnell Memorial Fellowship ($8,400 in total, awarded on academic merit), 1999-2001 |
| 1985-1987 | MSc in Informatics and Mathematics, Central University de Las Villas "Marta Abreu", Cuba. |
| 1980-1984 | BSc in Mathematics, Sofia University "St. Kliment Ohridski", Bulgaria |

## 1.2 Employment history

| | |
|---|---|
| 2008 to date | Associate Professor (full-time, tenured) Department of Computer Science & Software Engineering, Concordia University |
| 2002-2008 | Assistant Professor (full-time, tenure-track) Department of Computer Science & Software Engineering, Concordia University |
| 2001- 2002 | Lecturer (full-time) Department of Computer Science & Software Engineering, Concordia University |
| 1998- 2001 | Graduate Teaching Assistant Department of Computer Science & Software Engineering, Concordia University |
| 2000-2001 | Faculty Research Assistant Department of Computer Science & Software Engineering, Concordia University |
| 1996-1997 | (Maternity leave) |
| 1991-1995 | Lecturer LSI Department, Polytechnic University of Catalonia, Spain. Part-Time Instructor Instituto Catalan de Technologia, Spain |
| 1987-1990 | Software Analyst Direccion Provincial de Vivienda, Data Processing Department, Cuba |

### 1.3 Software Engineering expertise

- CO-OP Academic Director
- Software Engineering Research
- Software Quality Measurement
- Software Requirements Management
- Software Project Management
- Teaching of Software Engineering undergraduate and graduate courses

### 1.4 Licensing

2008 to date          Ordre des Ingénieurs du Québec. Professional Engineer. Membership Number: 130066

### 1.5 Language Proficiency

English          Full professional proficiency

Spanish          Professional working proficiency

Russian          Professional working proficiency

French          Limited

Bulgarian          Native

### 1.6 Competencies

- Communications skillsets with technical and scientific peers
- Communications skillsets with a wider audience, including elicitation of business goals and in non-technical language advising on appropriate analytical approaches for data collection, analysis and decision-making.
- Problem solving
- Managerial and leadership skills
- Capable of understanding and leading change and Innovation
- Analytical skills

### 1.7 Personal Suitability

- Flexibility and dependability
- Integrity and sound judgment
- Respectful of diversity
- Team player

## 2. Research Dossier

This section presents a summary of my contribution to the research output of the CSSE department in the field of software engineering.

### 2.1 Research Statement

My strategy for research and publications has been to create a strong research group and build the required lab environment, publish at top workshops and conferences supported by the IEEE and ACM, and then target top international journals in the field. Since 2002, I have authored/co-authored 17 refereed journal papers, 113 refereed conference/workshop papers and 7 book chapters. My journal publications have been published or are in press in refereed journals with an impact factor in the range of 0.60 to 2.71 (for comparison purposes, the impact factor of the IEEE's software journal, which is considered to be the gold standard among software engineering publications, is in the range of 1.5).

My **main area of research** is Measurement modeling and standardization in software engineering, and its extension to big data quality modeling and measurement.

**Leave of absence.** Please, note that the impact of the long-term sick leave (under doctoral treatment and follow-up from the beginning of December 2017 till December 2018) was two-fold:

- it affected my scientific productivity in 2017/18 and 2018/19
- it also lowered my research students' supervision/ graduation rate in 2017/18 and 2018/19

### 2.2 Publications

The table below summarizes my life time publications by number:

| Summary Table of Publications | |
|---|---|
| **Type of publications** | **Life-time** |
| Refereed Journal Publications | 17 |
| Refereed Conference / Workshop Publications | 113 |
| Book Chapters | 7 |
| Total | 135 |

### 2.2.1 Referred Journal Papers

*Please note that in my list of publications, student co-authors are noted with an asterisk (\*).*
*Links are added where available for an easy access to the publications.*

 [1] Zhu,\* M., Grogono, P., Ormandjieva, O., & Kuang\*, H. (2017). A Categorical Approach to Verifying Concurrency Between Design and Implementation. Journal of Ubiquitous Systems and Pervasive Networks, 8(2), 7-13.
 [2] Alnanih\*, R. and Ormandjieva, O. (2017) Improving Software Quality-in-Use Model for Mobile Applications. DASMA Journal of the Software Metrics Community Software Measurement News (MetricsNEWS), 22(1), 17-34.
 [3] Ebrahimi\*, M., Suen, C. Y., & Ormandjieva, O. (2016). Detecting predatory conversations in social media by deep Convolutional Neural Networks. Digital Investigation, 18, 33-49. doi: 10.1016/j.diin.2016.07.001. [Journal Impact: 2.34]

[4] Ebrahimi*, M., Suen, C. Y., Ormandjieva, O., & Krzyzak, A. (2016). Recognizing Predatory Chat Documents using Semi-supervised Anomaly Detection. Electronic Imaging, 2016(17), 1-9. Publisher: Society for Imaging Science and Technology. [Journal Impact: 0.98]

[5] Hussain*, I., Kosseim, L., Ormandjieva, O. (2013). Approximation of COSMIC functional size to support early effort estimation in Agile. Data & Knowledge Engineering, Elsevier. Volume 85, 2-14. [Journal Impact: 1.50]

[6] Talib*, M. A., El Barachi, M., & Ormandjieva, O. (2012). An Innovative Marketing Strategy to Promote our College of IT: Zayed University Case Study. Issues in Informing Science & Information Technology, 9, 161. ISSN: 1547-5840. http://iisit.org/Vol9/IISITv9p161-175Talib042.pdf

[7] Abu Talib*, M., El Barachi, M., Khelif, A., & Ormandjieva, O. (2012). Guide to ISO 27001: UAE Case Study. Issues in Informing Science and Information Technology, 7. ISSN: 1547-5840.  http://iisit.org/Vol9/IISITv9p331-349Talib041.pdf.

[8] Shaban-Nejad*, A., Ormandjieva, O., Kassab*, M., & Haarslev, V. (2009). Managing requirement volatility in an ontology-driven clinical LIMS using category theory. International Journal of Telemedicine and Applications, 8.

[9] Zheng*, M., Alagar, V., & Ormandjieva, O. (2008). Automated generation of test suites from formal specifications of real-time reactive systems. Journal of Systems and Software, 81(2), 286-304. [Journal Impact: 2.71]

[10] Ormandjieva, O., Alagar, V. S., & Zheng*, M. (2008). Early quality monitoring in the development of real-time reactive systems. Journal of Systems and Software, 81(10), 1738-1753. [Journal Impact: 2.71]

[11] Olga Ormandjieva, O., Vassev, E.  (2008). ASSL Specification of a Self-Scheduling Modeling and Monitoring in Reactive Autonomic Systems: Team-Robotics Case Study. International Transactions on Systems Science and Applications, Volume 4 (3), October 2008, pp. 277-286.

[12] Ormandjieva, O., Abu Talib*, M., & Abran, A. (2008). Reliability Model for Component-Based Systems in COSMIC-FFP (a Case Study). International Journal of Software Engineering and Knowledge Engineering, 18(04), 515-539.

[13] Ormandjieva, O., & Vassev, E. (2007). ASSL Specification of a Self-Scheduling Mechanism in Team-Robotics Modeled with the AS-TRM. Communications of SIWN (formerly: System and Information Sciences Notes), Volume 2 (1), September 2007, pp. 132-137. [Journal Impact: 0.60]

[14] Abu Talib*, M., Ormandjieva, O., Abran, A., & Buglione, L. (2006). Scenario-based Black-Box Testing in COSMIC-FFP: a Case Study. ASQ Software Quality Professional Journal 8 (3), pp. 23-33. [Journal Impact: 0.88]

[15] Ormandjieva, O., Kuang*, H., & Vassev, E. (2006). Reliability Self-Assessment in Reactive Autonomic Systems: Autonomic System-Time Reactive Model Approach. International Transactions on Systems Science and Applications, Springer, Volume 2(1), 99-104.

[16] Da Yu Li*, Kiricenko*, V., & Ormandjieva, O. (2004). Halstead's Software Science in Today's Object Oriented World. DASMA Journal of the Software Metrics Community Software Measurement News (MetricsNEWS), 9 (2), 33-40.

[17] Alagar, V. S., Achuthan, R., Haydar, M., Muthiayen, D., Ormandjieva, O., & Zheng, M. (2003). A rigorous approach for constructing self-evolving real-time reactive systems. Information and Software Technology, 45(11), 743-761.

*Please note that there were no journal publications in 2014; the major research achievements were published in three book chapters instead. Also, my research output was affected by the long-term sick leave, which prevented me from submitting journal papers or book chapters after 2016.*

### 2.2.2  Book Chapters

[1] Keyvanpour, M., Ebrahimi*, M., Nayebi, N. G., Ormandjieva, O., & Suen, C. Y. (2016). Automated Identification of Child Abuse in Chat Rooms by Using Data Mining. Data Mining Trends and Applications in Criminal Science and Investigations, 245-274. IGI Global 2016.

[2] Talib*, M. A., Abran, A., & Ormandjieva, O. (2016). 2.5 COSMIC FFP and Functional Complexity (FC) Measures: A Study of Their Scales, Units, and Scale Types. COSMIC Function Points: Theory and Advanced Practices, 157.

[3] Alnanih*, R., Ormandjieva, O., & Radhakrishnan, T. (2014). A new methodology (CON-INFO) for context-based development of a mobile user interface in healthcare applications. In Pervasive Health , 317-342. Springer London.

[4] Alnanih*, R., Ormandjieva, O., & Radhakrishnan, T. (2014). Empirical Evaluation of Intelligent Mobile User Interfaces in Healthcare. In Advances in Artificial Intelligence (pp. 23-34). Springer International Publishing.

[5] Kassab*, M., Olga Ormandjieva. (2014). Non-Functional Requirements in Process-Oriented Approaches. In Encyclopedia of Software Engineering Three-Volume Set, pp. 1-11. Auerbach Publications. DOI: 10.1081/E-ESE-120050568.ISBN: 1-4200-5977-7; eISBN: 1-4200-5978-5

[6] Kassab*, M., Ormandjieva, O., Daneva, M. (2010). Managing the Changes and the Attainable Scope of Non-Functional Requirements in Software Engineering. Book Chapter in Methodologies for Non-functional Requirements in Service-oriented Architecture: Requirements Engineering, Model-driven Development, and Security. Information Science Reference-Imprint of: IGI Publishing. Editors: Nikola Milanovic, Junichi Suzuki  ISBN-13: 978-1-60566-794-2, ISBN: 1-60566-794-3

[7] Ormandjieva, O., & Vassev*, E. (2008). Towards ASSL Specification of Self-Scheduling Design and Monitoring in Team-Robotics Modeled with AS-TRM. In Novel Algorithms and Techniques In Telecommunications, Automation and Industrial Electronics (pp. 68-76). Springer Netherlands.

### 2.2.3  Referred Conferences/Workshops Proceedings

[1] Bhardwaj*, D., & Ormandjieva, O. (2021). Rigorous Measurement Model for Validity of Big Data: MEGA Approach. Proc. 25th International Database Engineering & Applications Symposium (IDEAS'21), 285-291. Montreal: ACM.

[2] Bhardwaj*, D., & Ormandjieva, O. (2021). Toward a Novel Measurement Framework for Big Data (MEGA). 3rd IEEE International Workshop on Big Data Computation, Analysis & Applications (BDCAA 2021). Proc. IEEE 45th Annual Computers, Analysis & Applications Conference (COMPSAC'32), 1580-1587. Montreal: IEEE.

[3] Cuadrado Gallego, J., Demchenko, Y., Losada, M., Ormandjieva, O: (2021). Classification and Analysis of Techniques and Tools for Data Visualization Teaching. EDUCON 2021, 593-1599.

[4] Baratalipour*, N., Suen, C. Y., & Ormandjieva, O. (2020). Abusive Language Detection using BERT Pre-trained Embedding. In International Conference on Pattern Recognition and Artificial Intelligence, 695-701. Springer.

[5] Ormandjieva, O., Omidbakhsh*, M., Trudel, S. (2020). Measurement Model for Veracity of Big Data. The 7th International Symposium on Big Data Principles, Architectures & Applications (BDAA 2020). As part of 18th International Conference on High Performance Computing & Simulation (HPCS 2020). In Proceedings of HPCS 2020.

[6] Ormandjieva, O., Omidbakhsh*, M., Trudel, S. (2020). Measuring the 3V's of Big Data: A Rigorous Approach. The Joint conference of the 30th International Workshop on Software Measurement and the 15th International Conference on Software Process and Product Measurement (IWSM-MENSURA 2020), October 2020.

[7] Trudel, S., Ormandjieva, O. (2020). Lean Measurement: A New Approach. The Joint conference of the 30th International Workshop on Software Measurement and the 15th International Conference on Software Process and Product Measurement (IWSM-MENSURA 2020), October 2020.

[8] Ormandjieva, O., Omidbakhsh*, M., (2020). Toward A New Quality Measurement Model for Big Data. In Proceedings of the 9th International Conference on Data Science, Technology and Applications (DAT. 9th International Conference on Data Science, Technology and Applications (DATA), Paris, France, July 2020.

[9] Sekeres*, J., Ormandjieva, O., Suen, C.Y., Hamel. J. (2020). Advanced Data Preprocessing for Detecting Cybercrime in Text-based Online Interactions. International Conference on Pattern Recognition and Artificial Intelligence ICPRAI 2020, October 2020.

[10] Patel*, N., Ormandjieva, O., Pitula, K. (2019). UTAUT-QiU: Technology Acceptance Evaluation Model with Integrated Quality-in-Use Assessment for Mobile UI Adapted for Low-and Post-literate Users. Advances in Usability and User Experience. AHFE 2019. Advances in Intelligent Systems and Computing. International Conference on Applied Human Factors and Ergonomics (AHFE'19), 177-187. Washington DC, United States. Springer, Cham, United States.
http://dx.doi.org/https://doi.org/10.1007/978-3-030-19135-1_

[11] Alsaig*, A., Alagar, V., Ormandjieva , O. (2018). A Critical Analysis of the V-Model of Big Data. Proceedings of 17th IEEE International Conference On Trust, Security And Privacy In Computing And Communications/12th IEEE International Conference On Big Data Science And Engineering, 1809-1813. New York, NY, IEEE

[12] Alsaig*, A., Alagar, V.; Ormandjieva, O. (2018). Foundational Issues on Big Data Science and Engineering. In Proceedings of IEEE 16th International Conference on Dependable, Autonomic and Secure Computing, 16th International Conference on Pervasive Intelligence and Computing, 4th International Conference on Big Data Intelligence and Computing and Cyber Science and Technology Congress, 995-100. Athens, Greece. IEEE,http://dx.doi.org/10.1109/DASC/PiCom/DataCom/CyberSciTec.2018.001

[13] Liu*, D., Suen, C. Y., & Ormandjieva, O. (2018). A novel way of identifying cyber predators. International Conference on Pattern Recognition and Artificial Intelligence ICPRAI 2018, May 2020. arXiv preprint arXiv:1712.03903.

[14] Khan*, M.N., Ormandjieva, O. and Pitula, K. (2017). Mobile Viewing and Self-Management of Patient's Electronic Health Records (EHRs) with MyHealthCloud. Proceedings of ACM MobiHoc'2017. 7th ACM Workshop on ACM Mobile Health 2017, Chennai, India.

[15] Omidbakhsh*, M. and Ormandjieva, O. (2017). Comparing the Quality of Numeracy Assessment Methods in Healthcare. 2017 IEEE 30th International Symposium on Computer-Based Medical Systems (CBMS). IEEE CBMS 2017 - International Symposium on Computer-Based Medical Systems, 423-428. Thessaloniki, Greece. IEEE.

[16] Zhu*, M., Grogono, P. and Ormandjieva, O. (2017). Exploring Relationships between Syntax and Semantics of a Process-Oriented Language by Category Theory. Proceedings of 8th International Conference on Ambient Systems, Networks and Technologies ANT-2017. 8th International Conference on Ambient Systems, NeANT-2017, 241–248, Madeiras, Portugal.

[17] Alnanih*, R., Ormandjieva, O. (2016) Mapping HCI Principles to Design Quality of Mobile User Interfaces in Healthcare Applications. In Proceedings of 13th International Conference on Mobile Systems and Pervasive Computing MobiSPC 2016, Montreal, August 15-18, 2016.

[18] Omidbakhsh*, M., Ormandjieva, O. (2016).  Measuring the Quality of Numeracy Skill Assessment in Health Domain. In Proceedings of 2nd International Conference on Health Informatics and  Medical Systems HIMS'16 , 103-109. Las Vegas, USA, July 25-28, 2016, ISBN: 1-60132-437-5, CSREA Press
http://worldcomp-proceedings.com/proc/p2016/HIM3993.pdf

[19] Omidbakhsh*, M., Ormandjieva, O. (2016). A Survey of Numeracy Assessment Approaches for Patient E-learning. In Proceedings of International Conference on Internet Economics and Psycho-Informatics (Internet-Informatics 2016). *Advanced Science Letters* 23.4 (2017): 3738-3741. Indonesia, 23 - 24 July 2016.

[20] Zhu*, M., Grogono, P., Ormandjieva, O., Zhao, K. (2016). Verifying Consistency of Process Communications between Design and Implementation of Concurrent Systems.  In Proceedings of the 2nd International Conference on Computer and Information Science and Technology (CIST'16), 132-1. Ottawa, Canada, May 11 – 12, 2016.

[21] Foldes*, D., Pitula, K., Ormandjieva, O. (2016). Using Tag Clouds as a Tool for Patients' Medical History Visualization and Record Retrieval.  Proceedings the N&N Global Technology For Computer and Information Technology 2016, 2-5. Dubai, UAE. Available online:

[22] Ormandjieva, O., Pitula, K., Mansura, C. (2015). Integrating UCD within an Agile Software Development Process in an Educational Setting. In Proceedings of the Canadian Engineering Education Association's Annual Conference - CEEA2015.

[23] Omidbakhsh*, M., & Ormandjieva, O. (2015). Goal-driven Modeling for Confidence-based Patient Numeracy Assessment: C-PNA. Procedia Computer Science Journal, Elsevier. Volume 63, 213-220. DOI:10.1016/j.procs.2015.08.336 [Journal Impact: 1.08]

[24] Zhu*, M., Grogono, P., Ormandjieva, O. (2015) Using Category Theory to Verify Implementation Against Design in Concurrent Systems, Procedia Computer Science Journal, Elsevier. Volume 52, 530-537, ISSN 1877-0509 . [Journal Impact: 1.08]
http://dx.doi.org/10.1016/j.procs.2015.05.030.

[25] Zhu*, M., Grogono, P., Ormandjieva, O., Kamthan, P. (2014). Using Category Theory and Data Flow Analysis for Modeling and Verifying Properties of Communications in the Process-Oriented Language Erasmus. In Proceedings of the 2014 International C* Conference on Computer Science & Software Engineering, 1- 4. ACM.

[26] Alnanih*, R., Ormandjieva, O., Radhakrishnan, T. (2013). A new quality-in-use model for mobile user interfaces. In Software Measurement and the 2013 Eighth International Conference on Software Process and Product Measurement (IWSM-MENSURA), 2013 Joint Conference of the 23rd International Workshop on, 165-170. IEEE.

[27] Rashwan*, A., Ormandjieva, O., & Witte, R. (2013). Ontology-Based Classification of Non-Functional Requirements in Software Specifications: A new Corpus and SVM-Based Classifier. In Computer Software and Applications Conference (COMPSAC), 2013 IEEE 37th Annual, 381-386. IEEE.

[28] Alnanih*, R., Ormandjieva, O., Radhakrishnan, T. (2013). Context-based and Rule-based Adaptation of Mobile User Interfaces in mHealth. Procedia Computer Science Journal, Elsevier. Volume 21, 390-397.  [Journal Impact: 1.08]

[29] Alnanih*, R., Radhakrishnan, T.,, Ormandjieva, O. (2012). Characterising context for mobile user interfaces in health care applications. Procedia Computer Science Journal, Elsevier. Volume 10, 1086-1093. [Journal Impact: 1.08]

[30] Hussain*, I., Ormandjieva, O., & Kosseim, L. (2012). LASR: A tool for large scale annotation of software requirements. In Empirical Requirements Engineering (EmpiRE), 2012 IEEE Second International Workshop on, 57-60. IEEE.

[31] Alnanih*, R., Ormandjieva, O., Radhakrishnan, T. (2011)  Challenges of Designing User Interfaces for Mobile Health Information Systems. Proceedings of the IEEE Canada WIE National Conference 2011 (WIENC'11), April 29-30, 2011, Toronto, Canada www.ieee.ca/wie/wienc11/abstracts/Alnanih_et_al.pdf

[32] Kassab*, M., Ormandjieva, O., & Daneva, M. (2011). Relational-model based change management for non-functional requirements: Approach and experiment. In Research Challenges in Information Science (RCIS), 2011 Fifth International Conference on, 1-9.

[33 Abdukalykov*, R., Hussain*, I., Kassab*, M., & Ormandjieva, O. (2011). Quantifying the Impact of Different Non-functional Requirements and Problem Domains on Software Effort Estimation. In Software Engineering Research, Management and Applications (SERA), 2011 9th International Conference on, 158-165.

[34] Talib*, M. A., Khelifi, A., Abran, A., & Ormandjieva, O. (2010). Techniques for quantitative analysis of software quality throughout the sdlc: The swebok guide coverage. In Software Engineering Research, Management and Applications (SERA), 2010 Eighth ACIS International Conference on, 321-328.

[35] Khurshid*, N., Ormandjieva, O., & Klasa, S. (2010). Towards a Tool Support for Specifying Complex Software Systems by Categorical Modeling Language. In Software Engineering Research, Management and Applications, 133-149. Springer Berlin Heidelberg.

[36] Mikhnovsky*, V., & Ormandjieva, O. (2010). Towards Enterprise Integration Performance Assessment based on Category Theory. In Advanced Techniques in Computing Sciences and Software Engineering, 335-340. Springer Netherlands.

[37] Kuang*, H., Ormandjieva, O., Klasa, S., & Bentahar, J. (2010). A formal specification of fault-tolerance in prospecting asteroid mission with Reactive Autonomic Systems

Framework. In ASAP 2010-21st IEEE International Conference on Application-specific Systems, Architectures and Processors, 99-106. .

[38] Kuang*, H., Bentahar, J., Ormandjieva, O., Shafieidizaji,* N., & Klasa, S. (2010). Formal Specification of Substitutability Property for Fault-Tolerance in Reactive Autonomic Systems. In SoMeT,  357-380.

[39] Ormandjieva, O., Mikhnovsky*, V. Yurasovskaya, E., Klasa, S., Bentahar, J. (2010). Categorical Representation of Software Services Quality and Decision-Making Using Markov Decision Process.  In: Proceedings of 20th International Conference on Software Measurement MENSURA2010, Stuttgart, Germany.

40] Condori-Fernandez, N., Daneva, M., Buglione, L., & Ormandjieva, O. (2010, May). Experimental study using functional size measurement in building estimation models for software project size. In Software Engineering Research, Management and Applications (SERA), 2010 Eighth ACIS International Conference on, 276-282. IEEE.

[41] Hussain*, I., Kosseim, L., & Ormandjieva, O. (2010). Towards approximating COSMIC functional size from user requirements in agile development processes using text mining. In Natural Language Processing and Information Systems, 80-91. Springer Berlin Heidelberg.

[42] Ormandjieva, O., Kuang*, H., & Klasa, S. (2009). Reactive Autonomic System Performance Modeling and Self-monitoring with Category Theory. In ICSOFT (1), 325-330.

[43] Kassab*, M., Daneva, M., & Ormandjieva, O. (2009). Towards an Early Software Effort Estimation Based on Functional and Non-Functional Requirements. In Software Process and Product Measurement, 182-196. [LNCS, volume 5891] Springer Berlin Heidelberg.

[44] Kassab*, M., Ormandjieva, O., & Daneva, M. (2009). An Ontology based approach to non-functional requirements conceptualization. In Software Engineering Advances, 2009. ICSEA'09. Fourth International Conference on, 299-308. IEEE.

[45] Kassab*, M., Ormandjieva, O., & Daneva, M. (2009). A Metamodel for Tracing Non-functional Requirements. In Computer Science and Information Engineering, 2009 WRI World Congress on (7), 687-694. IEEE.

[46] Kuang*, H., Ormandjieva, O., Klasa, S., Khurshid*, N., & Benthar, J. (2009). Towards specifying reactive autonomic systems with a categorical approach: a case study. In Software Engineering Research, Management and Applications 2009, 119-134. Springer Berlin Heidelberg.

[47] Hussain*, I., Ormandjieva, O., & Kosseim, L. (2009). Mining and Clustering Textual Requirements to Measure Functional Size of Software with COSMIC. In Software Engineering Research and Practice, 599-605.

[48] Ormandjieva, O., & Mikhnovsky*, V. (2009, March). Enterprise Integration Performance Modeling and Measurement Based on Category Theory. In Computer Science and Information Engineering, 2009 WRI World Congress on (7), 432-437. IEEE.

[49] Ormandjieva, O., Mikhnovsky*, V., & Klasa, S. (2009). Categorical Representation of Decision-Making Process Guided by Performance in Enterprise Integration Systems. In Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing, 221-232. Springer Berlin Heidelberg.

[50] Ilieva*, M., & Ormandjieva, O. (2009,). Nested NL Representation for OO Analysis and Design. In Proceedings of the 21st International Conference on Software Engineering and Knowledge Engineering SEKE, 49-54.

[51] Zheng*, M., & Ormandjieva, O. (2009). Reliability Analysis in the Early Development of Real-Time Reactive Systems. In Computer Science and Information Engineering, 2009 WRI World Congress on (7), 807-812. IEEE.

[52] Al-Nanih*, R., Al-Nuaim, H., & Ormandjieva, O. (2009). New health information systems (HIS) quality-in-use model based on the GQM approach and HCI principles. In Human-Computer Interaction. Interacting in Various Application Domains, 429-438. Springer Berlin Heidelberg.

[53] Zheng*, M., Alagar, V., & Ormandjieva, O. (2008). Automated generation of test suites from formal specifications of real-time reactive systems. Journal of Systems and Software, 81(2), 286-304.

[54] Hussain*, I., Kosseim, L., & Ormandjieva, O. (2008). Using linguistic knowledge to classify non-functional requirements in SRS documents. In Natural Language and Information Systems, 287-298) Springer Berlin Heidelberg.

[55] Kassab*, M., Ormandjieva, O., & Daneva, M. (2008). A traceability metamodel for change management of non-functional requirements. In Software Engineering Research, Management and Applications, 2008. SERA'08. Sixth International Conference on, 245-254. IEEE.

[56] Kassab*, M., Ormandjieva, O., Daneva, M., & Abran, A. (2008). Non-Functional Requirements Size Measurement Method (NFSM) with COSMIC-FFP. In Software Process and Product Measurement, 168-182. Springer Berlin Heidelberg.

[57] Seresht*, S. M., & Ormandjieva, O. (2008). Automated assistance for use cases elicitation from user requirements text. In Proceedings of the 11th Workshop on Requirements Engineering (WER 2008) (16), 128-139.

[58] Kuang*, H., & Ormandjieva, O. (2008). Self-Monitoring of Non-functional Requirements in Reactive Autonomic Systems Framework: A Multi-agent Systems Approach. In Computing in the Global Information Technology, 2008. ICCGI'08. The Third International Multi-Conference on, 186-192. IEEE.

[59] Quiroz*, J., & Ormandjieva, O. (2008). Methodology for Automatic Generation of Exhaustive Behavioral Models in Reactive Autonomic Systems. In SETP, 95-104.

[60] Kassab*, M., Daneva, M., & Ormandjieva, O. (2008, September). A meta-model for the assessment of non-functional requirement size. In Software Engineering and Advanced Applications, 2008. SEAA'08. 34th Euromicro Conference, 411-418. IEEE.

[61] Buglione, L., Ormandjieva, O., & Daneva, M. (2008). Using PSU for early prediction of COSMIC size of functional and non-functional requirements. In Software Process and Product Measurement, 352-361. Springer Berlin Heidelberg.

[62] Seresht*, S. M., Ormandjieva, O., & Sabra, S. (2008). Automatic conceptual analysis of user requirements with the requirements engineering assistance diagnostic (READ) tool. In Software Engineering Research, Management and Applications, 2008. SERA'08. Sixth International Conference on, 133-142. IEEE.

[63] Seresht*, S. M., Ormandjieva, O., (2008). Towards Automatic Diagnostic of Conceptual Problems in Requirements Engineering. In International Conference on Software Engineering Theory and Practice SETP-08, 105-114.

[64] Talib*, M. A., Khelifi, A., Abran, A., & Ormandjieva, O. (2008). Assessment of Real-Time Software Specifications Quality Using COSMIC-FFP. In Software Process and Product Measurement, 183-194. Springer Berlin Heidelberg.

[65] Ormandjieva, O., Hussain*, I., Kosseim, L. (2007). Toward a text classification system for the quality assessment of software requirements written in natural language. In Fourth international workshop on Software quality assurance: in conjunction with the 6th ESEC/FSE joint meeting, 39-45. ACM.

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### 2.2.4   Other Publications

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### 2.3 Research Funding Support

To support my research efforts, I have been involved in the following successful grant applications (with the exception of first entry, which is my current NSERC DG application):

| SOURCE OF EXTERNAL FUNDING | Indicate PI or Co-PI | Start Date | End Date | Annual Amount (% if applicable) |
|---|---|---|---|---|
| CASA - GCS Bridge for Research | PI | 09/2020 | 31/08/2021 | $10,000 |
| OVPRGS | PI | 10/2017 | 09/2018 | $15,000 |
| NSERC Discovery Grant | PI | 04/2012 | 03/2017 | $14,000/year |
| NSERC Engage Grant | PI | 04/2010 | 03/2010 | $25,000 |
| NSERC Canadian Distributed Mentor Project | PI | 05/2008 | 04/2009 | $1,000 |
| NSERC Discovery Grant | PI | 04/2005 | 03/2009 | $19,000/year |
| NSERC Discovery Grant | PI | 04/2002 | 03/2004 | $12,000/year |
| Support of Research Theses (SRT) Grant, Office of the Vice-President | PI | 01/2005 | 12/2005 | $23,000 |

| Support of Research Theses (SRT) Grant | PI | 01/2006 | 12/2006 | $30,500 |
|---|---|---|---|---|
| Support of Research Theses (SRT) Grant | PI | 01/2007 | 12/2007 | $32,500 |
| Support of Research Theses (SRT) Grant | PI | 01/2008 | 12/2008 | $41,000 |
| Support of Research Theses (SRT) Grant | PI | 01/2009 | 12/2009 | $24,000 |
| SEED – Individual Grant | PI | 06/2014 | 05/ 2016 | $7,500 |
| SEED – Individual Grant | PI | 06/2010 | 05/2011 | $7,500 |
| SEED – Individual Grant | PI | 06/2009 | 05/2010 | $7,500 |
| SEED – Team Grant | PI | 06/2009 | 05/2010 | $15,000 |
| Seed - Strategic International Partnership | PI | 09/2012 | 08/2013 | $3,500 |
| Aid to Research Related Events, Publication and Dissemination | PI | 06/2010 | 05/ 2011 | $5,000 |
| Work-Study Program | PI | 06/2010 | 05/2011 | $4,700 |
| Work-Study Program | PI | 06/2009 | 05/2010 | $12,600 |
| FCAR | PI | 06/1999 | 08/2001 | $36,000 (total) |
| **TOTAL** | | | | 453, 300 |

## 2.4 Training of Highly Qualified Personnel (HQP)

My personal philosophy of training HQP is to mentor the research students and give them opportunities not only to develop their creativity, but also learn and practice fundamental research skills needed to succeed in their career, such as successfully presenting their ideas and publishing their achievements in good quality conferences and journals.

Since 2002 I have been able to attract very good Canadian and international students. I supervised 1 post-doctoral fellow (Dr. Ilieva), graduated 7 Ph.D. students, 20 Master's students in the Thesis option, and 10 Master's students in the Major Report option. Please note that the Major Report option is no longer offered to CSE graduate students (a Major Report had been worth 15 credits and included topics such as a survey or the implementation of new algorithms/tools). As part of the Canadian Distributed Mentor initiative, I supervised NSERC Undergraduate Student Research Award (USRA) female undergraduate software engineering students for two years in the summer of 2007 and in the summer of 2008.

I am currently jointly supervising the doctoral students Alaa Alsaig, Dave Bhardwaj and Hiba Fallatah.

**Important note:** as mentioned earlier, my contributions to HQP training in 2017/18 and 2018/19 were significantly slowed down due to a long-term medical leave.

### 2.4.1 Training Environment

My graduate students receive a high-quality training in research and practical applications. I take a hands-on approach and involve myself actively in training and mentoring the research students under my supervision. I provide students with important opportunities such as collaboration with the industry (RE: my Engage NSERC grant with SAO, 2011) or non-profit organizations (please, refer to my contribution C2). For example, master's students Mohammadreza Ebrahimi (2016) and Dan Liu (2018) collaborated with Division des enquêtes sur la cybercriminalité, Sûreté du Québec, on automatic detection of cyber-predators in social media. The students regularly presented their achievements at our meetings with the team from Sûreté du Québec. Presently, master's student John Sekers continues the research in collaboration with Sûreté du Québec. John presented the research outcomes of his work at the conference "Rencontre sur l'analyse et la recherche en milieu policier", Centre de recherche et de développement stratégique (CRDS) deÉcole nationale de police du Québec, October 9, 2019. John's research contributions were presented at the ICPRAI 2020 - Second International Conference on Pattern Recognition and Artificial Intelligence conference and published in a paper coauthored with Mme Joanie Hamel from Sûreté du Québec.

### 2.4.2 HQP Awards and Research Contributions

The graduate students under my supervision received several awards during their studies at Concordia, such as International Student Fees Remission and Conferences Support for Graduate Students (Concordia University). The research results of my students are always being published in relevant workshops, conferences, or journals. I publish together with my graduate students and provide them with funding to attend conferences so that they can present their research personally. I consider this a very important part of their training. As is evident from my list of publications more than 80% have been co-authored with my students.

### 2.4.3 Outcomes and Skills Gained by HQP.

The quality of my students' training and their acquired knowledge is also evident in the fact that they traditionally graduate with excellent results and immediately find employment in the industry or academia. For example, the doctoral student Ming Zhu who graduated in 2016 is an assistant professor at the College of Computer Science & Technology, Shandong University of Technology, Zibo, Shandong, China. The doctoral student Reem Alnanih (graduated in 2016) is an assistant professor at the Faculty of Computing and Information Technology - Department of Computer Science, King Abdelaziz University, Jeddah, Saudi Arabia. Mandana Omidbakhsh (doctoral student graduated in 2016) is currently holding a post-doc position at L'Université du Québec à Montréal (UQAM), and he doctoral student Ishrar Hussain who graduated in 2014 holds a Senior NLP/ML Architect position at SAP Labs LLC, Boston, USA.

The table below lists the PhD and MSc students who were (co-)supervised or are currently under my (co-)supervision:

| Student Name (status) | Program | sole supervision / Co-supervisor's name | Start Date | End Date | Thesis Title | Current Position (PhD students only) |
|---|---|---|---|---|---|---|
| **Doctorate** | | | | | | |
| Dave Bhardwaj (in program) | PhD | N/A | 09/21 | … | Big Data in the Medical Field | student |
| Hiba Fallatah (in program) | PhD | Dr. Suen | 09/19 | … | Sentiment analysis | student |
| Alaa Alsaig (in program) | P hD | Dr. Alagar | 01/17 | … | Big Data Management & Analysis | student |
| Ming Zhu (graduated) | PhD | Dr. Grogono | 09/12 | 09/16 | A Categorical Framework for the Development of Concurrent Systems with Process-Oriented Languages | Assistant Professor College of Computer Science & Technology Shandong University of Technology Zibo, Shandong, China |
| Mandana Omidbakhsh (graduated) | PhD | sole | 04/14 | 09/16 | A Methodology for Confidence-based Adaptive Numeracy Skill Assessment in Healthcare | Post-Doc, UQAM |
| Reem Alnanih (graduated) | PhD | Dr. T. Radhakrishnan | 9/09 | 04/15 | CON-INFO: A Context-based Methodology for Designing and Assessing the Quality of Adaptable MUIs in Healthcare Applications | Assistant professor at the Faculty of Computing and Information Technology - Department of Computer Science, King Abdelaziz University, Jeddah, Saudi Arabia |
| H M Ishrar Hussain (graduated) | PhD | Dr. L. Kosseim | 9/08 | 9/14 | Linguistic Approaches for early Measurement of Functional Size from Software Requirements | Senior NLP Architect at SAP Labs LLC Post-Doctoral Fellow at Massachusetts Institute of Technology |

| Heng Kuang (graduated) | PhD | Dr. J. Bentahar | 1/06 | 09/13 | Towards a Formal Reactive Autonomic Systems Framework using Category Theory | IBM Toronto Research Laboratory, Canada |
|---|---|---|---|---|---|---|
| Mohamad Kassab (graduated) | PhD | Dr. M. Daneva, University of Twente | 09/05 | 09/09 | Formal and Quantitative Approach to Non-Functional Requirements Modeling and Assessment in Software Engineering | Assistant professor at the Pennsylvania State University, USA. |
| Manar Abu-Talib (graduated) | PhD | Dr. Alain Abran, ETS | 05/03 | 04/07 | Exploratory Study on an Innovative Use of COSMIC-FFP for Early Quality Assessment | Assistant professor at the College of Information Technology, Zayed University, Abu Dhabi - UAE |
| **Master's Thesis** | | | | | | |
| Dave Bhardwaj (graduated) | MASc | N/A | 08/20 | 09/21 | Measurement Framework for Assessing Quality of Big Data (MEGA) in Big Data Pipelines | |
| John Sekeres (graduated) | MASc | Dr. Suen | 05/18 | 08/22 | Novel Tool for identifying networks of predators in social media | |
| Nikhalesh Patel (graduated) | MASc | Dr.Pitula | 09/17 | 03/19 | UTAUT-QiU: Technology Acceptance Evaluation Model with Integrated Quality-in-use for Mobile User Interfaces adapted for Low and Post-literate users | |
| Dan Liu (graduated) | MASc | Dr. Suen | 05/16 | 04/18 | Identifying Cyber Predators by Using Sentiment Analysis and Recurrent Neural Network | |
| Muhammad Nsr Khan (graduated) | MASc | Dr.Pitula | 05/15 | 09/16 | Mobile Viewing and Self-Management of Patient's Electronic Health Records (EHRs) with MyHealthCloud | |
| Mohammadreza Ebrahimi (graduated) | MASc | Dr. Suen | 09/14 | 04/16 | Automatic Identification of Online Predators in Chat Logs by Anomaly Detection and Deep Learning | PhD in Information Systems from the University of Arizona. Assistant Professor, University of South Florida, USA (2022 - to date) https://mohammadrezaebrahimi.github.io/ |
| Daphne Foldes (graduated) | MASc | Dr. Pitula | 01/14 | 09/15 | Using Tag Clouds as a Tool for Patients' Medical History Visualization and Record Retrieval | |
| Abderahman Rashwan (graduated) | MASc | R. Witte | 04/11 | 04/14 | Automated Quality Assurance of Nonfunctional Requirements for Testability | |
| Rolan Abdukalykov (graduated) | MASc | Sole | 1/09 | 09/11 | A New methodology for Quantifying the Impact of non-functional Requirements on Software Effort Estimation | |

| Shadi Moradi Seresht (graduated) | MA Sc | sole | 05/06 | 09/08 | A Methodology for Semi-Automatic Assistance in Elicitation and Analysis of |
|---|---|---|---|---|---|
| Noorulain Khurshid (graduated) | MA Sc | Dr. S. Klasa | 1/08 | 09/11 | Towards Specifying Swarm-based Systems using Categorical Modeling Language: A Case Study |
| Jinzi Huang (graduated) | MA Sc | Dr. J. Bentahar | 9/09 | 09/11 | Modeling Multi-Agent Systems with Category Theory |
| Nassir Shafiei Dizaji (graduated) | MA Sc | Dr. J. Bentahar | 9/09 | 09/11 | Towards Specifying Swarm-based Systems using Categorical Modeling Language: A Case Study |
| Javier Quiroz (graduated) | MA Sc | sole | 01/05 | 09/07 | Automatic Generation of Behavioral Specification in Autonomic Reactive Systems |
| H M Ishrar Hussain (graduated) | MA Sc | Dr. Kosseim | 09/04 | 09/07 | Using text classification system to automate ambiguity detection in SRS documents. |
| Heng Kuang (graduated) | MA Sc | sole | 09/04 | 09/07 | Architecture for Autonomic Systems: AS-TRM approach |
| Mohamad Kassab (graduated) | MA Sc | sole | 05/03 | 09/05 | Methodology for Modeling and Measuring Aspects |
| Mubarak Sami Mohamad (graduated) | MA Sc | Dr. Alagar | 05/02 | 09/04 | Graphical Simulation of Real-Time Reactive Systems |
| Jian Shen (graduated) | MA Sc | Dr. Alagar | 05/02 | 09/04 | Scenario-Based Performance Assessment of Real-Time Reactive Systems |
| Shi Hui Liu (graduated) | MA Sc | Dr. Alagar | 09/01 | 09/03 | Simulated Validation of Real-Time Reactive Systems |

In conclusion, I believe that I have made a significant contribution to the research output of the CSSE Department with my emphasis on engineering activities in research.

## 3. Teaching Dossier

### 3.1 Teaching Statement

One of the reasons I joined Concordia University is that I enjoy the idea of teaching and imparting knowledge to students. I believe that the role of a teacher is that of a leader where you have to show the path, motivate, encourage, and lead by example. I encourage dynamic and stimulating interaction in class and during office hours, which helps students better assimilate the course material. I focus on creating the best possible climate for learning, on being enthusiastic about the subject and on letting students know that I am accessible. I believe that the students find me very approachable and feel comfortable talking to me.

My main strength as a software engineering teacher is that I am capable of teaching critical thinking and of training students in abstract thinking. I like to design tests, quizzes and assignments which are challenging and which add to the individual's learning experience. At the same time, I regard preparing for a class in advance as absolutely essential to the quality of teaching. I prepare my courses in an unambiguous and structured way so that the content and the requirements for the course are clear to the students. The course material is being constantly updated to consider the latest developments in the subject. In all the software engineering courses I teach, I cover the ISO/IEC and IEEE standards related to the course material. It is my belief that a trained software engineer must be familiar with the existing standards.

I have made significant use of the course Web. Moodle pages to provide course-related information to students, and to give them access to sample midterms, quizzes and finals and their possible solutions, as well as assignments, projects, etc. In addition, I provide links to useful information pertinent to the course.

In addition to the above activities, the following demonstrate my commitment to teaching:

- I do not hesitate to experiment with new teaching tools, such as "pseudo" 1% quizzes and small, individual homework assignments to enable students to practice the course material weekly.
- I have introduced anonymous questionnaires on the course content which I distribute to the students in my classes during the term for early detection of problems in their learning progression.
- After every class, I spend a few minutes reflecting on the class and updating my class journal (a tool suggested by the Centre for Teaching and Learning (CTL); a class journal is used for making notes on student feedback in class, on the tutor's comments on the material and the students' ability to absorb the material, on questions raised which require additional class time for clarification, etc.).

The teaching tasks involve hard work and dedication. However, the rewards are immense as I enjoy this activity. My success lies in seeing my students succeed and I experience it when I see my students move on to industry or to a higher degree educational program. Eventually some of the past students evolve into useful professional and industrial contacts, which stay in touch long after they have graduated.

In software project courses such as SOEN6841, SOEN384 and SOEN390, the students need mentoring not only in the technical aspects of the project, but also in group interaction and effective teamwork. While the team work and interpersonal skills are acquired through experience, the teacher should play a crucial role in identifying their position in a dynamic group. As a teacher, I discuss with each team various teamwork-related problems they might encounter and guide them

through the process. I achieve this by spending significant time with each group. Besides, I also mentor individual students, keeping advice within the realm of the group.

According to the Canadian Engineering Accreditation Board's regulations, the responsibilities of a software engineering professor include teaching ethics ethical aspects of the engineering profession, which also need to be practiced in SOEN courses so that the future engineers would be better prepared to serve the society. In my soen390 course, the software engineering students practiced ethical aspects of their profession through a collaborative project with the Welcome Hall Mission (Montreal). Their experience was shared with the SOEN community in a Concordia Engineering News article published in 2013:

# SOFTWARE SOLUTIONS FOR THE WELCOME HALL MISSION

BY MARK WITTEN

As she handed out food supplies to people at Montreal's Welcome Hall Mission in the summer of 2011, Olga Ormandjieva could identify with the many newcomers to Canada. "I'm an immigrant too and I remembered the hard times of my first few years in Canada," she says. "I just wanted to help." The associate professor of computer science and software engineering arrived in Canada from Bulgaria 17 years ago with three kids and began her PhD at Concordia shortly afterwards. Her daughter Maya, now a teenager, also volunteered with the Welcome Hall Mission.

Ormandjieva learned that the Mission's Family Services department, which distributes food to 800 to 1,000 Montreal families every week, needed to replace its 15-year-old Family Services Tracking System, which was originally developed to replace a manual index card system. It served the mission well and was a model of efficient design. However, technology developments, as well as changes in Family Services, rendered the system obsolete. "Technology has advanced a lot, and staff were worried the system could fail at any moment," says Ormandjieva, who also serves as program director for computer science and software engineering at Concordia's Institute for Co-operative Education (Co-op).

She proposed to Tania Togias, Welcome Hall Mission's family services director, and IT coordinator Gordon McPhee, that Concordia software engineering students collaborate with them on a large-scale project to build new, improved software for the FSTS. The new software would help Mission staff more efficiently and easily keep track of clients who qualify for services, book service appointments, manage events, and generate statistical data for the reporting required by governments and donors.

All 35 students in the third-year software engineering mini-capstone course, SOEN 390, worked in competing teams to build a new version of FSTS, under the supervision of two doctoral students, Ming Zhu and Tamer Abdou, in the winter of 2012. They produced five fully functional prototypes. "The competition and presentations really added a lot to the students' motivation. The client chose the prototype with a user interface that was really easy to work with, which was also easier to maintain," explains Ormandjieva.

The project has been an eye-opener for most students. "They are very enthusiastic about the FSTS project, not only because it gave them an opportunity to work on a real project for a real client, but also because of the good cause," she says.

Co-op funded the FSTS project by supporting the work of two students, Cassie Wong, a second-year computer science student, and Oleksandr Dymov, a second-year software engineering student. Wong and Dymov did their first Co-op work term in the fall of 2012, completing the remaining work on important functions of FSTS such as client files and event management. "My job was to work on the details of those functions to make sure the end result was what the client wanted," says Cassie.

The project was a huge confidence and momentum builder for both Dymov and Wong. "When I started, I was under-qualified," Wong says. "I learned so much in the work term that I'll have confidence in my technical skills and soft skills, like people and organization skills, for future employers." She confesses she was surprised at the number of food bank recipients and impressed by the number of volunteers who help out. "I've never had any experience with non-profits before. Seeing what they do is touching."

The new FSTS system is in the testing phase and Welcome Hall Mission will be using it this summer. "Our staff are absolutely thrilled with the results," says McPhee, who has already proposed an encore project—another golden opportunity for Concordia students to acquire valuable experience and to help out with a worthy cause.

**3.2 List of all undergraduate and graduate courses taught**

The table below list all courses taught by me at the CSE Department, Concordia University. In summary, since 2001 I have taught **69** sections of **17** different graduate and undergraduate courses; the total number of students in my classes was more than 3000.

| Semester | Course No. | Course Title | No. of Students |
|---|---|---|---|
| F'22 | SOEN6611 | Software Measurement: Theory and Practice | 43 |
| S'22 | SOEN6611 | Software Measurement: Theory and Practice | 37 |
| W'22 | SOEN6611 | Software Measurement: Theory and Practice | 45 |
| S'21 | SOEN6611 | Software Measurement: Theory and Practice | 35 |
| W'21 | SOEN6611 | Software Measurement: Theory and Practice | 15 |
| F'20 | SOEN6841 | Software Project Management | 21 |
| W'20 | SOEN6841 | Software Project Management | 86 |
| F'19 | SOEN6841 | Software Project Management | 83 |
| W'19 to S'19 | Sabbatical (6 months) | | |
| S'18 to F'18 (incl.) Long-term leave | | | |
| W'18 | SOEN331 | Formal Methods | 199 |
| F'17 | SOEN384 | Software Project Management & Quality Control | 148 |
| F'17 | SOEN6841 | Software Project Management | 83 |
| W'17 | SOEN6841 | Software Project Management | 88 |
| F'16 | SOEN384 | Software Project Management & Quality Control | 89 |
| F'16 | SOEN6841 | Software Project Management | 69 |
| W'16 | SOEN331 | Formal Methods | 60 |
| W'16 | SOEN6841 | Software Project Management | 76 |
| F'15 | SOEN384 | Software Project Management & Quality Control | 72 |
| F'15 | SOEN6841 | Software Project Management | 87 |
| F'14 | SOEN384 | Software Project Management & Quality Control | 72 |
| F'14 | SOEN6841 | Software Project Management | 74 |
| W'13 | Sabbatical (6 months) | | |
| F'13 | SOEN384 | Software Project Management & Quality Control | 55 |
| S'13 | SOEN6611 | Software Measurement: Theory and Practice | 65 |
| W'13 | SOEN390 | Software Project (mini-capstone) | 50 |
| W'12 | SOEN345 | Software Testing | 37 |
| W'12 | SOEN390 | Software Project (mini-capstone) | 35 |
| F'11 | SOEN6841 | Software Project Management | 35 |
| F'11 | SOEN384 | Software Project Management & Quality Control | 39 |
| S'11 | SOEN6611 | Software Measurement: Theory and Practice | 44 |
| W'11 | SOEN390 | Software Project (mini-capstone) | 43 |
| W'11 | SOEN345 | Software Testing | 58 |
| F'10 | SOEN384 | Software Project Management & Quality Control | 64 |
| W'10 | SOEN345 | Software Testing | 39 |
| F'09 | Sabbatical (6 months) | | |
| S'09 | SOEN6611 | Software Measurement: Theory and Practice | 35 |
| W'09 | SOEN390 | Software Project (mini-capstone) | 38 |
| W'09 | SOEN337 | Measurement in Software Development | 32 |
| F'08 | SOEN342 | Software Requirements and Specifications | 43 |
| S'08 | SOEN7481 | Software Testing and Verification | 28 |

| W'08 | SOEN390 | Software Project (mini-capstone) | 23 |
|---|---|---|---|
| W'08 | SOEN337 | Measurement in Software Development | 20 |
| S'07 | SOEN6481 | System Requirements Specifications | 58 |
| S'07 | SOEN7481 | Software Testing and Verification (reading course, evaluated online) | 3 |
| W'07 | SOEN6611 | Software Measurement: Theory and Practice | 48 |
| W'07 | SOEN337 | Measurement in Software Development | 25 |
| F'06 | SOEN342 | Software Requirements and Specifications | 40 |
| F'06 | SOEN6481 | System Requirements Specifications | 52 |
| W'06 | SOEN337 | Measurement in Software Development | 18 |
| F'05 | COMP6481 | System Requirements Specifications | 42 |
| F'05 | SOEN342 | Software Requirements and Specifications | 41 |
| S'05 | COMP691D | Software Measurement: Theory and Practice | 49 |
| W'05 | SOEN337 | Measurement in Software Development | 47 |
| W'05 | COMP354 | Software Engineering I | 26 |
| F'04 | COMP6481 | System Requirements Specifications | 48 |
| F'04 | SOEN342 | Software Requirements and Specifications | 48 |
| W'04 | SOEN337 | Measurement in Software Development | 23 |
| W'04 | COMP354 | Software Engineering I | 25 |
| F'03 | COMP6481 | System Requirements Specifications | 26 |
| W'03 | SOEN337 | Measurement in Software Development | 50 |
| W'03 | COMP354 | Software Engineering I | 18 |
| F'02 | COMP352 | Data Structured and Algorithms | 52 |
| F'02 | SOEN343 | Software Design | 47 |
| S'02 | COMP6481 | System Requirements Specifications | 50 |
| W'02 | COMP248 | Introduction to Programming | 26 |
| W'02 | COMP354 | Software Engineering I | 42 |
| F'01 | SOEN343 | Software Design | 66 |
| S'01 | COMP648 | System Requirements Specifications | 45 |
| W'01 | COMP648 | System Requirements Specifications | 29 |

## 3.3 Academic Director of Computer Science and Software Engineering Department at Concordia's Institute for Co-operative Education (2011-2014)

My CO-OP duties included:
- Direct supervision of CO-OP IT partnership and job placement of our students in: i) co-operative undergraduate program in Software Engineering, ii) undergraduate Industrial Experience, and iii) graduate Industrial Experience programs.
- Evaluation of Work Term reports and grading of CO-OP final Work Term presentations for computer science and software engineering students in CO-OP programs.
- Development of CO-OP Entry schedules for students in our undergraduate computer science and software engineering programs.

## 3.4 Other evidence of teaching related activities

### 3.4.1 Curriculum Development

The software engineering topics I teach are evolving very fast, and thus the students are learning the theoretical principles and current practices, and developing the ability to explore new and changing practical environments on their own.

### 3.4.2 New Courses

I introduced **a new graduate software engineering course**, **SOEN6611** on Software Measurement: Theory and Practice (initially listed as COMP691D), in line with current research theories and practices in software measurement. This addition has made Concordia one of the few universities offering such a course at the graduate level. The topic of software measurement has generated interest among graduate students.

I introduced **a new software engineering undergraduate software engineering course SOEN345** on software testing in line with current research and practices in software testing, including automated testing and tools.

### 3.4.3 Redeveloped Courses

I **redeveloped** the software engineering course **SOEN384** on software management and quality control. It now reflects the newest trends in software methodologies, the ISO/IEC and IEEE standards, and the available measurement tools.

I revitalized **SOEN 6481** on software specifications by updating the material to include the latest industrial trends and software engineering standards. In addition to the formal course evaluations, numerous students have come to me and expressed their appreciation of the work I put into my class, and told me repeatedly that I am one of the best professors they have had.

I revitalized **SOEN7481** on software testing, which had not been taught in the Department since 1998. The course now includes the latest software engineering testing methods and standards.

### 3.4.4 Use of Software Engineering Standards

In all the software engineering courses I teach, I cover the **ISO/IEC** and **IEEE standards** related to the course material. It is my belief that a trained software engineer must be familiar with the existing standards.
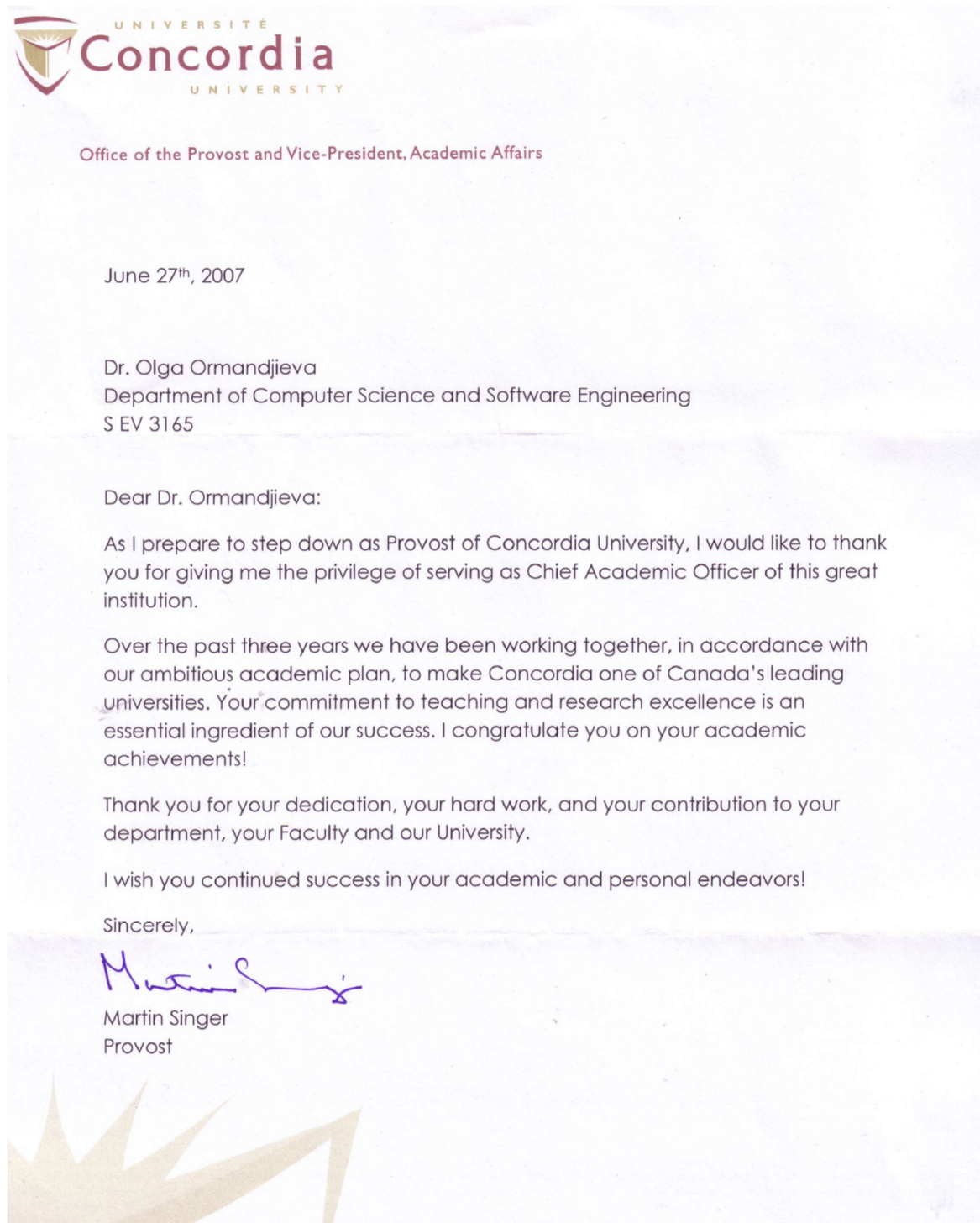
### 3.4.5 Course Material

Over the years, I have developed extensive material for the software courses at both the undergraduate and graduate levels. The teaching material I have prepared for my courses can be used within the Department for the benefit of all.

I focus on creating the best possible climate for learning, on being enthusiastic about the subject and on letting students know that I am accessible. After every class, I spend a few minutes reflecting on the class and updating my class journal (a tool suggested by the CTL; a class journal is used for making notes of student feedback in class, of the tutor's comments on the material and students' ability to absorb the material, questions that were raised and would require additional class time for their clarification, etc

Testimony to my students' appreciation of my work is the number of them who have asked me to supervise their theses. As a supervisor of Master's and doctoral students, I have gained significant experience in guiding students' research through regular discussions of their work, in groups or individually. I give them freedom to find their own way to solve research problems, guiding their research process and suggesting solutions where required, and at the same time demanding a high-quality research outcome. I also teach them rules for preparing good presentations and structuring their ideas in writing; I guide them in reading, understanding and judging their own research papers or those of others – skills that are much needed in the research field.

### 3.4.6 Letter from Dr. Martin Singer, Provost

UNIVERSITÉ
# Concordia
UNIVERSITY

Office of the Provost and Vice-President, Academic Affairs

June 27th, 2007

Dr. Olga Ormandjieva
Department of Computer Science and Software Engineering
S EV 3165

Dear Dr. Ormandjieva:

As I prepare to step down as Provost of Concordia University, I would like to thank you for giving me the privilege of serving as Chief Academic Officer of this great institution.

Over the past three years we have been working together, in accordance with our ambitious academic plan, to make Concordia one of Canada's leading universities. Your commitment to teaching and research excellence is an essential ingredient of our success. I congratulate you on your academic achievements!

Thank you for your dedication, your hard work, and your contribution to your department, your Faculty and our University.

I wish you continued success in your academic and personal endeavors!

Sincerely,

Martin Singer
Provost

## 4. Contribution to the Canadian Engineering Accreditation Board (CEAB)

I served as a program visitor for the software engineering program on the visiting team for Accreditation Visit to Carleton University in November 2017. Below please find participation

confirmation issued by Engineers Canada in reference to the Carleton Accreditation Visit in 2017.

REF: CARLETON - 2017 VISIT

**CONFIDENTIAL**

January 3, 2018

Dr. Olga Ormandjieva, ing.
EV3 165, CSE Department
Concordia University
1455 Maisonneuve West
Montréal, QC H3G 1M8

Dear Dr. Ormandjieva:

**RE: November 25 – 28, 2017 Accreditation Visit to Carleton University**

On behalf of the Canadian Engineering Accreditation Board, I thank you for the time and effort you devoted as a program visitor for the software engineering program on the visiting team for the above-referenced accreditation visit.

Engineers Canada views the work of the Accreditation Board as one of its major functions. Without the dedicated efforts of professionals like you, our world class accreditation system simply could not function.

Please know that your time and effort are valued and appreciated.

Yours truly,

**Adam Rodrigues**
Coordinator, Accreditation Visits
Coordonnateur, Visites d'agrément

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## 5. Service Dossier

Throughout my academic career I have contributed to the departmental and institutional governance. The following sections outline my involvement in service-related activities since I joined Concordia University in 2002. It includes information regarding my service to the faculty,

university and the academic community, including service on external agencies, granting agencies, journal committees, editorial boards, etc.

## 5.1 Service to the Faculty, University and the Academic Community

### 5.1.1   Examiner of Master's and Doctoral theses

During my years of service at Concordia University, I chaired a very large number of Master's and Doctoral theses. I served as Committee Examiner for numerous Master's and Doctoral theses, in the CSE Department and in the Faculty of Engineering.  In the past, I served as well as an examiner for many Major Reports of graduate students at our department.

### 5.1.2   Committee Memberships

My service to the CSE Department and the faculty includes the following workload on the committees to which I have been appointed during my service at Concordia:

| | |
|---|---|
| 2020-2022 | Departmental Personnel Committee (DPC)<br>Department of Computer Science & Software Engineering,<br>Concordia University |
| 2020-2022 | Faculty Council,<br>Gina Cody School of Engineering and Computer Science<br>Concordia University |
| 2019-2020 | PhD Defenses Chairing Committee<br>Concordia University |
| 2019-2020 | Faculty committee on engineering, technology, and societal transformation<br>Concordia University |
| 2016-2017 | Committee on major/minor in alternative economies for social and environmental justice program development<br>Concordia University |
| 2016-2017 | College of Ethics Reviewers (CER)<br>Concordia University |
| 2017-2018 | Software Engineering Curriculum (undergrad and grad programs)<br>Department of Computer Science & Software Engineering,<br>Concordia University |
| 2017-2018 | Part-Time Faculty Hiring Committee (PTHC)<br>Department of Computer Science & Software Engineering,<br>Concordia University |
| 2016 | Full-Time Faculty Hiring Committee, Software Engineering Group<br>Department of Computer Science & Software Engineering,<br>Concordia University |

| 2014-2015 | Graduate Awards Committee<br>Department of Computer Science & Software Engineering,<br>Concordia University |
|---|---|
| 2009-2014 | Assessment of Software Engineering Graduate Attributes (CEAB) in the undergraduate SOEN program<br>Department of Computer Science & Software Engineering,<br>Concordia University |
| 2011-2013 | Course Graduate Advisory Committee (CGAC)<br>Department of Computer Science & Software Engineering,<br>Concordia University |
| 2008-2010 | Undergraduate Advisory Committee (CGAC)<br>Department of Computer Science & Software Engineering,<br>Concordia University |

## 5.2 Event Administration / Participation

| 2021 | Organizer of a Research Track on Big Data Quality Measurement and Management at IDEAS'21 Conference, Montreal, 2021. |
|---|---|
| 2020 | Organizer of a Special Session on Forensic Science at the International Conference on Pattern Recognition and Artificial Intelligence Conference, ICPRAI 2020. |
| 2018 | Organizer of a Special Session on Forensic Science at the International Conference on Pattern Recognition and Artificial Intelligence Conference, ICPRAI 2020. |
| 2010 | Conference organizer, 8th ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2010)., Montreal 2010. |

## 5.3 Community and Volunteer Activities

| 2008-2011 | IEEE, Women in Engineering (WIE) Montreal Affinity Group Chair Organizer of several seminars, book club sessions nd panel discussions on the role of women engineers in technological and scientific advances. |
|---|---|
| 2009-2010 | I served as secretary of the IEEE Montreal Computer Chapter |

## 5.4 Service on External Agencies, Granting Agencies, Journal Committees, Editorial Boards, etc.

### 5.4.1   Research Funding Application Assessment Activities

| 2020 | External Reviewer, Science Council National Competition for 2020.<br>Number of applications assessed: 1 |
|---|---|

| 2017 | External Reviewer, Mitacs Accelerate Research Proposals.<br>Number of applications assessed: 1 |
|---|---|
| 2015-2016 | External Reviewer, NSERC Discovery Grants – Individual, Committee 1079.<br>Number of applications assessed: 3 |
| 2010 | Conference organizer, 8th ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2010)., Montreal 2010. |

### 5.4.2 Editorial Activities

| 2016 | Reviewer, Pervasive Health: State-of-the-art & Beyond. Book, Springer. |
|---|---|
| 2015 | Reviewer, Data Mining Trends & Applications in Criminal Science and Investigations. Book. |
| 2011 | Critical review and proof-reading of the book Software metrics: A Rigorous and Practical Approach (3rd edition) by Norman Fenton & James Bieman. |
| 2010 | Editor of the Proceedings of the 8th ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2010)., Montreal 2010. |

### 5.4.3 Conference Review Activities

My service to the academic community includes participation on the program committees for several international conferences/workshops:

- IEEE Ninth International Conference on Research Challenges in Information Science RCIS. Program Committee member
- IEEE International Requirements Engineering Conference. Program Committee member
- EUROMICRO CONFERENCE on Software Engineering and Advanced Applications (SEAA). Program Committee member
- IEEE Canadian Conference on Electrical and Computer Engineering. Technical Program Committee member
- The Joint Conference of the International Workshop on Software Measurement (IWSM) and the International Conference on Software Process and Product Measurement (Mensura). Program Committee member
- Software Engineering Research, Management and Applications (SERA). Organizer of the conference in 2010. Program Committee member
- First International Workshop on Formal Methods for Self-Adaptive Systems (FMSAS), Program Committee member
- International Conference on ICT in Education, Research, and Industrial Applications ICTERI. Program Committee member
- International Working Conference on Requirements Engineering: Foundation for Software Quality. Program Committee member

- International Workshop on Formal Methods for Self-Adaptive Systems (FMSAS), Program Committee member
- International Conference on Advanced Software Engineering & Its Applications (ASEA), Program Committee member
- International Conference on Self-organization and Adaptation of Computing and Communications (SSCC). Program Committee member
- CSIE World Congress on Computer Science and Information Engineering, Program Committee member
- Canadian Conference for Computer Science (C3S2E) Program Committee member **References**