

TEGAR WICAKSONO

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Objective

To pursue a career in software development for commercial applications, working to develop client-based solutions and simultaneously implementing industry best practices, and applying appropriate SDLC methodologies such as Agile or Waterfall to ensure timely delivery of maintainable products.

Summary

- Current role as a developer for an engineering research group in The University of British Columbia.
- Earn a certification in Agile Practices for Software Product Management (2017, U of Alberta) and a PhD in Computational Materials Science (2016, UBC).
- 3+ years experience in C++11 code development (console-based applications in Visual Studio and GUI applications via Qt), including 1 year as a lead developer in an Agile team of 5.
- Previous projects include development of parallel codes in OpenMP platform for scientific research, implementation of machine learning algorithm as diagnostics tool for defect identification, simple game development in Unity, and a co-author of a commercialization proposal for a semiconductor device.
- Contributor to an open-source object-oriented multi-threaded C++ software distributed by a U.S. national laboratory; intern as a master student in an institute for high performance computing.
- Willing to relocate within Canada, holder of Open Work Permit (valid until 2019 and renewable at own's expense), Permanent Resident status expected by end of 2017.

Experience

- 2016-present **Research Fellow, The University of British Columbia.**
- Apply Agile methodologies as a lead developer in a team of 5 to deliver a code to simulate complex alloys, with calculation time reduced by 6 months and a \$30k savings compared to legacy codes running on Amazon Web Service
 - Run statistical analyses for materials diagnostics of a nuclear reactor, preventing a damage scenario that can cost \$1 million for the facility
 - Mentor a master student in collaboration with Tsinghua University, China.
- 2010-2015 **Graduate Student Researcher, The University of British Columbia.**
- Implement best practices and Boost libraries on the development of C++11 code for simulating the behaviour of engineering alloys
 - Contribute to an open-source multi-threaded C++ software distributed by a U.S. national laboratory
 - Adopt test-driven development via CATCH C++ for code benchmarking
 - Apply unsupervised machine learning algorithms to characterize terabytes of data from nuclear reactors.
- 2009-10 **Research Engineer, National University of Singapore.**
- Co-author a successful grant awarded by Singapore Ministry of Defense (\$15k)
 - Conduct test on mechanical properties of copper alloys for submarine application.
- 2009 **Research Intern, Institute of High Performance Computing, Singapore.**
- Contribute as a junior developer in a team delivering a parallel C++ code to simulate electronic properties of a semiconductor device.

Education

- 2017 **Agile Practices for Software Product Management specialization, University of Alberta**
Complete 5 courses with 99% overall grade and a capstone project on delivering an educational ebook app for a children's bookstore in 4 months. [Link]
- 2016 **Doctor of Philosophy, The University of British Columbia**
Publish 4 peer-reviewed papers (the cohort average is 2 papers). Receive academic awards and recognitions for student leadership.
- 2009 **Master of Engineering, Massachusetts Inst. of Technology (MIT)**
Co-author a commercialization proposal for a novel semiconductor device, with venture capital firms as the targeted readers. Receive a fellowship from the Singapore Government.
- 2008 **Bachelor of Engineering, Nanyang Technological Univ., Singapore**
Earn a Minor in Business and Computing. Graduate with First-class honours. Receive Dean's List award for 3 years.

Technical Skills and Interest

- Programming languages: compiled languages (C++11, Java), interpreted languages (Python including scikit-learn, Octave, Matlab).
- Other tools and technologies: Git version control, deployment via Docker containers, GUI applications designed in QT5.0, PostgreSQL database management, task parallelism via OpenMP.
- Side projects: front-end web development for personal website, development of simple games on Unity Engine and Unreal (demos available on here).

Select Publications

- A. T. Wicaksono, M. Militzer, C. W. Sinclair, *A molecular dynamics study on the effect of helium clusters on grain boundary migration in α -iron*, Philosophical Magazine, **96**, 3746 (2016) [PDF].
- A. T. Wicaksono, C. W. Sinclair, M. Militzer, *An atomistic study on the correlation between the migration of planar and curved grain boundaries*, Computational Materials Science, **117**, 397 (2016) [PDF].
- A. T. Wicaksono, C. W. Sinclair, M. Militzer, *A three-dimensional atomistic kinetic Monte Carlo study of dynamic solute-interface interaction*, Modelling and Simulation in Materials Science and Engineering, **21**, 085010 (2013) [arXiv].

Societies and Professional Organizations

- 2016-present **Engineer-In-Training (EIT) at Association of Professional Engineers and Geoscientists, British Columbia (APEG BC).**
- 2015-present **Member of Executive Committee at American Welding Society, BC Section.**
- 2012-2014 **President at Joint Students Chapter, The University of British Columbia.**
- 2012-2014 **Volunteer at Arts Club Theater Company, ASM BC Chapter.**