

# MICHAEL J. PROCOPIO, Ph.D.

Boulder, Colorado

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## STATUS

Currently employed as a Senior Software Engineer at Google working on Google Drive.

## EDUCATION

### Ph.D. Computer Science, University of Colorado at Boulder, December 2007

- Research Concentration: Machine Learning, Pattern Recognition, Data Mining
- Thesis Title: *An Experimental Analysis of Classifier Ensembles for Learning Drifting Concepts over Time in Autonomous Outdoor Robot Navigation*. Thesis Advisor: Greg Grudic

### M.S. Computer Science, University of Florida, May 2002

- Research Concentration: Artificial Intelligence, Real-Time Wireless Collaboration
- Thesis Title: *YCab.NET: Decentralized Collaboration Groupware for Mobile Devices using the Microsoft .NET Framework*. Thesis Advisor: Abdelsalam Helal

### B.S. Computer Science, University of Florida, May 2002

- Minor in Business Administration
- Graduation with High Honors, Invited Commencement Speaker
- National Merit Finalist

## WORK EXPERIENCE

### Software Engineer, Google, March 2010 to Present

- Software design and engineering in Google Drive ([drive.google.com](http://drive.google.com)).
- Team lead and cross-team contributor with success record of launching many high-impact user-facing features. Examples: [Google Drive API/SDK](#), [Google Drive API/SDK V2](#), [File Versions](#), [Web-based File Upload](#).
- Engineering experience in the back-end, front-end, and developer-facing APIs for Google Drive. XX0,000 lines of code contributed to date.
- Published a book on Google Drive, [Google Drive Starter](#).

### Senior Member of the Technical Staff, Sandia National Laboratories, June 2002 to February 2010

- Delivered SAPLE (Sandia Advanced Personnel Locator Engine), a web-based personnel directory application using phonetic and approximate string matching. In production company-wide with a user base of 12,000 users; 10,000 queries daily.
- Search Analytics Team: design, code, and deploy algorithms to improve internal search quality using probabilistic methods applied to query log data. Focus: automated improvement of search results over time.
- Machine learning and data mining methods for improved nuclear explosion monitoring in high-performance computing contexts. Large catalogs of parametric and time-series data. Statistical classifier evaluation.
- Machine learning and data mining using graph-based methods for large-scale malicious web page detection.
- Published machine learning research in supervised classifier ensemble methods in large-scale, real-time, distributed data scenarios. Research focused on combining local models learned on heterogeneous data.

## **WORK EXPERIENCE** *(continued)*

### **Student Consultant, Microsoft Corporation, August 2001 to May 2002**

*Paid student representative for Microsoft at the University of Florida campus.*

- Duties included giving technical presentations on Microsoft technologies and programming languages (C#).
- Identified student and faculty projects which could benefit from Microsoft technologies.

### **Research Assistant, University of Florida, December 2001 to May 2002**

*Graduate Research Assistant for Dr. Abdelsalam Helal for the UF Harris Lab.*

- Research focused on wireless networking and peer-to-peer ad-hoc collaboration.
- Gave Industrial Advisory Board (IAB) presentations.

### **Teaching Assistant, University of Florida, August 2001 to December 2001**

*Lecture Teaching Assistant (TA) in the Computer Science department; taught a class of 50 undergraduate students.*

- Course taught was CIS3020, the introductory course in Computer Science for CS majors, taught in Java.
- Received positive supervisor evaluations and ranked the highest overall in student course evaluations.

### **Software Test Engineer Intern, Microsoft Corporation, May 2000 to August 2000**

*Worked on a team of software testers for Microsoft Outlook 2002 ("Office XP").*

- Was directly responsible for creation of test cases, execution of tests, and documentation of test results.
- Negotiated with developers to get bugs fixed. Also designed and implemented an internal testing tool used extensively in test scripts and by Product Support Services (PSS).
- Received a positive re-hire recommendation at the end of the internship.

### **Software Engineer, O&P Digital Technologies, December 1998 to May 2002**

*Project Manager and Team Lead in charge of development of a medical practice management software system.*

- OPIE Practice Management Suite, a flagship product that continues to be a commercial success.
- Duties included working with stakeholders to create specification and design of software.
- Responsible for primary implementation and programming of the application.

### **Resident Assistant, University of Florida, May 1998 to May 1999**

*Dormitory Section Leader (RA) responsible for developing and overseeing a community of 40 co-ed residents.*

- In charge of community development, resolving conflicts among residents, and enforcing rules.
- Underwent extensive training in conflict resolution, emergency procedures, crisis management, personality types, diversity recognition, community development, and team-building skills.

## **SELECTED TECHNICAL SKILLS**

**Software Engineering:** strongest languages are Java, JavaScript, Python, C#, C++, Lisp, and MATLAB.

**Web-Based Applications Development,** including extensive Java Enterprise and web development experience with JSPs and Servlets, JavaScript and AJAX, database design and SQL query development, XML, web services, and SOAP. Emphasis on rich user interfaces, usability, and advocacy for the user experience.

**Machine Learning and AI,** including statistics, data mining, and pattern recognition. Emphasis on real-time and large-scale data scenarios. Experience in applying these methods to real-world problems in production contexts.

**Large-Scale Algorithms and High-Performance Computing.** Large-scale data mining methods, including graph-based and distributed data methods. Parallel algorithm design experience. Multi-core experience with Java Parallel Processing Framework (JPPF), with proficiency in concurrency and threading constructs.

## PATENTS

- Approximately 18 patents filed with the USPTO since 2010, under active review.

## PUBLICATIONS

- T. J. Draelos, M.J. Procopio, J. E. Lewis, and C. J. Young. "False Event Screening Using Data Mining in Historical Archives." *Seismological Research Letters* 83(2) 267-274 (2012). ([PDF](#))
- K. M. Taylor, M. J. Procopio, C. J. Young, and F. G. Meyer. "Exploring the Manifold of Seismic Waves: Application to the Estimation of Arrival-Times." *Geophysical Journal International - Seismology* (2011). ([PDF](#))
- M. J. Procopio, G. Grudic, and J. Mulligan. "Coping with Imbalanced Training Data for Improved Terrain Prediction in Autonomous Outdoor Robot Navigation." In IEEE International Conference on Robotics and Automation (ICRA 2010). ([PDF](#))
- M. J. Procopio. "SAPLE: Sandia Advanced Personnel Locator Engine." Sandia National Laboratories Technical Report #2010-1756 (2010). ([PDF](#))
- K. W. Larson, M. J. Procopio, A. I. Gonzales, D. M. Melgaard, F. Rothganger, D. S. Myers, and B. R. Rohrer. "Image Data Processing for Integrated Circuit Analysis." Sandia National Laboratories Technical Report #SAND2009-8404 (2009).
- T. G. Kolda and M. J. Procopio. "Generalized BadRank with Graduated Trust." Sandia National Laboratories Technical Report #2009-6670 (2009). ([PDF](#))
- M. J. Procopio, W. P. Kegelmeyer, G. Grudic, J. Mulligan. "Terrain Segmentation with On-line Mixtures of Experts for Autonomous Robot Navigation." In 8th International Workshop on Multiple Classifier Systems (MCS 2009), Springer Lecture Notes in Computer Science Vol. 5519 ([PDF](#))
- M. J. Procopio, C. J. Young, and J. E. Lewis. "Using machine learning to improve the efficiency and effectiveness of automatic nuclear explosion monitoring systems." In Proceedings of the 31st Monitoring Research Review: Ground-Based Nuclear Explosion Monitoring Technologies (MRR 2009). ([PDF](#))
- D. B. Carr, M. E. Resor, C. J. Young, and M. J. Procopio. "Exploring the limits of waveform correlation event detection as applied to the 1994 Northridge earthquake aftershock sequence." In Proceedings of the 31st Monitoring Research Review: Ground-Based Nuclear Explosion Monitoring Technologies (MRR 2009). ([PDF](#))
- M. J. Procopio. "Learning Terrain Segmentation with Classifier Ensembles for Autonomous Robot Navigation in Unstructured Environments." *Journal of Field Robotics*, 26(2) 145-175 (2009). ([PDF](#))
- M. J. Procopio, J. Mulligan, and G. Grudic. "Learning in Dynamic Environments with *Ensemble Selection* for Autonomous Outdoor Robot Navigation." In Int'l Conf on Intelligent Robots and Systems (IROS 2008). ([PDF](#))
- M. J. Procopio. *An Experimental Analysis of Classifier Ensembles for Learning Drifting Concepts Over Time in Autonomous Outdoor Robot Navigation*. Ph.D. Thesis, University of Colorado at Boulder, 2007. ([PDF](#))
- M. J. Procopio, J. Mulligan, and G. Grudic. "Long-Term Learning Using Multiple Models for Outdoor Autonomous Robot Navigation." In International Conference Intelligent Robots and System (IROS 2007). ([PDF](#))
- M. J. Procopio, T. Strohmman, A. R. Bates, G. Grudic, and J. Mulligan. "Using Binary Classifiers to Augment Stereo Vision for Enhanced Autonomous Robot Navigation." CU/Boulder Technical Report, April 2007. ([PDF](#))
- J. M. Linebarger, A. J. Scholand, M. Ehlen, and M. J. Procopio. "Benefits of Synchronous Collaboration Support for an Application-Centered Analysis Team Working on Complex Problems: a Case Study." In Proceedings of the 2005 International ACM SIGGROUP Conference on Supporting Group Work (GROUP 2005). ([PDF](#))
- M. J. Procopio. *YCab.NET: Decentralized Collaboration Groupware for Mobile Devices using the Microsoft .NET Framework*. Master of Science Thesis, University of Florida, 2002. ([PDF](#))

## **HONORS AND AWARDS**

- Google SPOT, Peer, Launch, and Patent Bonuses, 2010-2013
- Sandia National Laboratories SPOT Award and Bonus for SAPLE, 2009
- Sandia National Laboratories Classified Inventor Award, 2009
- Sandia National Laboratories SPOT Award and Bonus for Recruiting, 2009
- Sandia National Laboratories Doctoral Study Program (DSP) Fellowship, 2004–2007
- Sandia National Laboratories President's Quality Award (PQA), Gold Level, 2004
- Department of Energy Defense Programs Award of Excellence, Team Award, 2003
- Sandia National Laboratories Employee Recognition Award Nominations, 2002, 2003, 2004
- Sandia National Laboratories SPOT Award and Bonus for Teaming, 2002
- University of Florida College of Engineering Scholarship, 2001–2002
- University of Florida Sales Engineering Scholarship, 2001
- Florida Bright Futures Academic Scholarship, 1997–2001
- University of Florida Merit Scholarship, 1997–2001
- Westinghouse Family Scholarship, 1997
- National Merit Finalist, 1997