

## Dr. Michael Barnathan

PO Box 2106 Secaucus, NJ 07096 732-328-8268 michael@barnathan.name

---

**Objective:** To use my extreme breadth, adaptability, vision, and strategic skill to perform significant purpose-driven work which changes the world for the better.

**Selected Interests:** Tech Leadership and Recruiting, STEM Education, Machine Learning, Evolutionary Computation, World-Class Software Development, Contextual Mobile Apps, Internet of Things, Computer Vision, Computer-Assisted Diagnosis, Data Structures.

---

### Technical Knowledge

**Programming Languages:** Java, Groovy, C++, Objective-C, Perl, Matlab, Python, PHP, Visual Basic, some Ruby.

**Web Development:** Responsive HTML 5 / CSS 3, JavaScript, jQuery, Firebase, AngularJS 1.x, Meteor.

**“Big Data”:** Ph. D. in machine learning: wavelets, SVD, spectral graph theory, computer vision.

**“The Cloud”:** Firebase, Digital Ocean, Heroku, Google App Engine, some AWS.

**Development Tools:** IntelliJ, Eclipse, Bazel, Gradle, Maven, git, Protocol Buffers.

**Database Systems:** MySQL, Firebase, PostgreSQL, SQLite, MS SQL Server, Microsoft Access, Hive.

**System Administration:** “LAMP”: Linux, Apache (>50 vhosts), nginx, MySQL, Tomcat, Perl, BIND, SSH, Postfix, Dovecot, amavisd, iptables, cron, syslogd, logrotate, Nagios, Cacti, etc.

**Mobile and Desktop:** Android, iOS, Windows, Linux (Gentoo, Arch, Ubuntu, Raspbian), Arduino.

**Biotechnology:** Alignment, phylogenetics, basic synthetic biology, genetic engineering, electrophoresis, PCR, spectrophotometry.

---

### Employment and Entrepreneurship

**April 7, 2015 – Present**      **Co-Founder, The Mountaintop Program**  
Mountaintop is revitalizing K-12 education by encouraging students to discover their callings, then backing them up through the creative journey that follows. Recruited mentors, directly managed 75+ volunteers, set strategy, coordinated our pilot, pitched, wrote our tech platform and website, primary point of contact for the schools.

**Aug. 18, 2014 – Sep. 11, 2015**      **Director of Engineering, Amplify**  
Managed everyone on the software side of the Amplify Tablet (a customized Android device for K-12 classrooms), also contributing to larger corporate strategy, tech recruiting, and field support. Led process and technical discussions, bridged project management and engineering, resolved inter-team conflicts and removed blockers.

**April 7, 2014 – Aug. 15, 2014**      **Senior Software Engineer**  
**June 1, 2012 – Sep. 28, 2012**      **Senior Software Engineer**  
**Sep. 13, 2010 – May 31, 2012**      **Software Engineer**  
**Google**

Contributed to [Bazel](#), Google’s insanely fast and scalable build system, and related projects using Java, C++, Shell, Python, Protobuf, and graph theory. Committed ~20,000 peer-reviewed lines per year of large, complex changes across three projects, introducing literally zero bugs during my first year (3 total). Formulated a set of extreme (and repeatable!) software quality and project management principles from the experience. **Extra peer/spot bonuses:**

- Nov. 2010: Fixed blocking issues on a release.
- Feb. 2011: For very high code quality on a complex and critical change.
- Jul. 2011: Enabled another team to meet a major quarterly objective.
- Sep. 2011: A batch -> realtime change which sped two teams up by 5x.
- Dec. 2011: Led a major three team effort to success despite pushback. **(Spot bonus)**
- Feb. 2012: Created a massively parallel release tool, reducing release time from 5h to 5m.
- Mar. 2012: When that tool saved our release!
- Mar. 2012: For a well-received [public tech talk](#).
- Aug. 2012: Fixed a Google-wide deadlock.

**Oct. 16, 2013 – Dec. 21, 2013**    **Head of Mobile, 8coupons**

**Jan. 26, 2013 – Oct. 16, 2013**    **Founder and CEO, Clipless**

*(acquired by 8coupons)*

Founded Clipless, a contextual Android app (using Java/Tomcat/JAX-RS on the server-side for reuse between frontend and backend) which collects deals from over 2,000 sources and delivers them on-location and at the point of action. Led the company to huge traction, gaining nearly 10,000 users in two weeks following launch and leading from idea to acquisition in a mere 8 months. Bootstrapped as a sole founder + three contractors.

**Jan. 1, 2013 – May 15, 2013**    **Director of Software Engineering**

**Oct. 1, 2012 – Dec. 31, 2012**    **Associate Director of Software Engineering**

**Owen Software**

Head of the company's entire development effort. Redefined software development processes and spearheaded organization-wide changes to remove bureaucracy while recruiting 4 (excellent) software development teams from the ground up. Designed the massive graph algorithm at the heart of the company's new product and communicated it to the teams. Successfully induced a cultural shift.

**Oct. 4, 2011 – April 15, 2013**    **Founder, Living Discoveries**

Developed, commercialized, and pitched [Digital Mammographer](#), a web-based automatic diagnostic system for breast cancer, which yielded above 90% accuracy (higher than an average radiologist) in preliminary studies.

**Dec. 7, 2009 – July 30, 2010**    **Data Scientist, dstillery (formerly Media6Degrees)**

Applied "big data" to sociographic targeting. Resident expert in spectral graph theory and SVD recommendation. Designed scalable learning algorithms using Hadoop, Java, Spring, Maven, Perl, R, and MySQL. Primary link between data science and development teams. Responsible for production implementation of feature computation.

**Sep. 9, 2008 – May 14, 2009**    **Adjunct Professor of Computer Science, Monmouth University**

Taught CS305 and CS503, Monmouth University's undergraduate and graduate courses in data structures and algorithms in Java, during the Fall 2008 (CS503) and Spring 2009 ([CS305/503](#)) semesters.

**Sep. 1, 1997 – Oct. 1, 2008**    **Founder, Metasquarer**

Developed, hosted, and supported [Metasquarer](#), an online game, from the age of 12. Supported the game, 27,596 lines of code in size, to a peak population of approximately 10,000 users. Created an O(n) algorithm to find squares within a grid and an alpha-beta pruning AI opponent from intuition years prior to learning the theory. Used the REST paradigm for client/server communication two years before it was officially invented.

**Oct. 1, 1994 – Present**    **Freelance Developer, Alight Software Development Studio**

Developing over 50 websites and apps using HTML 5, CSS 3, JS, Perl, MySQL, AngularJS, Firebase, and JAX-RS. Installed replicated "LAMP" environments from scratch on self-managed dedicated and cloud servers.

## Education

**Temple University**  
Philadelphia, PA

**Aug. 2006 – May 2010**  
**Aug. 2006 – Aug. 2007**

**Ph. D.** in Computer and Information Sciences. **GPA: 3.92 / 4.00**  
**Master of Science** in Computer and Information Sciences. **GPA: 3.89 / 4.00**

Thesis Topics: Dissertation: *Mining Complex High-Order Datasets*, defended April 23, 2010.  
Master's Project: *Medical Image Data Mining System*, published at ISBI 2008.  
Fellowships: Temple University Fellowship, CST Dean's Scholarship.  
Honor Societies: Golden Key International Honor Society.

**Monmouth University** **GPA: 3.96 / 4.00**  
West Long Branch, NJ

**Sep. 2002 – May 2006**

**Bachelor of Science *Summa Cum Laude*** in Computer Science, Math minor.

Awards: **\$5,000 Academic Achievement Award for the Highest GPA in the Class of 2006, Computer Science Award (2006), Dean's List:** All semesters.  
Scholarships: \$6,000/year Monmouth University Scholarship, 2x Dr. Harold Jacobs Scholarship.  
Honor Societies: Phi Eta Sigma, Lambda Sigma Tau, Kappa Mu Epsilon, Omicron Delta Kappa.  
Other Activities: President (2005-2006) and Vice President (2004-2005) of the MU ACM.  
Member of the School of Science Student/Alumni Advisory Council (2004-2009).

---

Public Speaking

**April 2015** ***Problem Decomposition for Fun and Profit, Kean University***  
Explained how to solve, test, and evaluate problems at HackKean 2015.

**March 2015** ***Android Apps the Right Way, City Tech***  
Shared how to write Android apps correctly and common pitfalls, as distinct from desktop Java development.

**January 2015** ***How to Build a Strong Startup: Tech Panel, Columbia University***  
Shared candid insights on risk taking, cohesiveness, fear, and support as a tech entrepreneur. The other panelists and moderator became the Mountaintop Program founding team!

(and 6 more from 2012-2014)

---

Other Skills:

- Extremely fast learner and wide breadth of knowledge.
- Proficient as a pianist, composer ([music portfolio](#)), and semiprofessional photographer ([Behance, 500px](#)).
- Electronics inventor and "maker": solar GPS (2010), "working" crystal balls (2010), EEG brain-computer interface (2011), Parkinson's-detecting knee brace (2011), voice-automated home (2012), SmartWink IoT Platform (2015), ESP8266 wifi-enabled window blinds (2016).

Complete portfolio available at <http://michael.barnathan.name>