

Dr. Michael Barnathan

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- Objective:** To translate efficient leadership, love for team recruiting and mentorship, and deep software and AI knowledge into world-changing companies and products.
- 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.
- Press Coverage:** [TechCrunch \(x2\)](#), [Wired](#), [Huffington Post](#), [EdSurge](#), [Android Police](#), [HackADay](#)
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Technical Knowledge

- Programming Languages:** Java, Python, Matlab, TypeScript, JavaScript, Groovy, C++, Perl, PHP, C#
- Web Frameworks:** HTML 5 / CSS 3, Node, Electron, jQuery, Firebase, React, Vue, Angular, AngularJS 1.
- ML / Data Science:** Spark, Jupyter, Beam, Airflow, BigQuery, BigTable, recommenders, CNNs, Transformer models, SVD, graph mining, computer vision.
- Cloud Platforms:** AWS, Google Cloud Platform, Digital Ocean, Firebase, Heroku.
- Development Tools:** IntelliJ, Eclipse, Bazel, Gradle, Maven, git, Protocol Buffers.
- Database Systems:** MySQL, Firebase, PostgreSQL, SQLite, Druid, BigQuery, Hive, MS SQL.
- 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, Ionic, Linux (Gentoo, Arch, Ubuntu), Arduino, Raspberry Pi.
- IoT and Home Media:** SmartThings, Lutron Clear Connect, ZWave, Zigbee, Wink, DLNA / Airplay, RTSP.
- Biotechnology:** Alignment (BLAST and FASTA), phylogenetics, basic synthetic biology, genetic engineering, electrophoresis, PCR, spectrophotometry, neuroradiology.
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Employment and Entrepreneurship

- Dec. 11, 2018 – Present** **ML Sci, ML Eng, + Anticheat TLM, Niantic** **Managing 12 ML engineers on 3 teams**
I now manage all machine learning at Niantic! Architected Niantic's next generation ML pipeline for petabyte-scale feature extraction and training. Spun up ML Eng from scratch and launched the pipeline in two quarters, then given management of Anticheat. Platformized anomaly detection within Pokemon Go in the same manner, exploiting an adjacency that put both teams 1Q ahead in 2019, then given responsibility for the ML Science team.
- Dec. 15, 2016 – Oct. 4, 2018** **CTO, ViewX** **Recruited and managed 3 engineers**
ViewX is an AI-powered video recommendation engine. As a co-founder of the company, I was responsible for anticipating industry trends, roadmapping our technology, and leading build/buy decisions. I also led recruiting, managed our technical team, and orchestrated architecture, tech, and hiring strategy. We created a highly accurate context-based video recommender and scaled it to service half of Vice Media's production traffic in realtime.
- April 7, 2015 – Nov. 9, 2016** **CEO, The Mountaintop Program** **Managed 75 mentors, 15 coordinators**
Mountaintop turns K-12 schools into The Accelerator for Everyone by mentoring students towards their callings.

With the help of 3 co-founders and ~15 volunteers from NYU, I recruited and coordinated the activities of 75 mentors over the course of a semester to incubate the projects of hundreds of students across 2 under-served NYC schools. The program culminated in a demo day which literally altered the course of many students' lives.

Aug 18, 2014 – Sep 11, 2015 **Director of Engineering, Amplify** **Managed 2 tech leads, 25 engineers**
Led software engineering on v2 of the Amplify Tablet, a highly customized Android device for K-12 classrooms. Turned the project around and helped Amplify [recapture a \\$16.8 million contract](#) with Guilford County Schools.

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 which collects deals from over 2,000 sources and delivers them on-location and at the point of action. Led the company to rocketship traction and went from nothing to a 7-figure acquisition in only 8 months. Scaled effortlessly through [two appearances](#) on the front page of TechCrunch.

Oct. 1, 2012 – May 15, 2013 **Director of Engineering, Owen Software** **Recruited + managed 4 TLs, 24 SWEs**
Head of the company's entire development effort. Redefined software development processes and spearheaded organization-wide changes, recruited and managed 24 engineers and 4 TLs across 4 development teams from the ground up. Led architectural discussions around the massive graph algorithm at the heart of the company's product, driving team and executive consensus. Organized the launch of Pathevo v3, Owen's flagship product

June 1, 2012 – Sep. 28, 2012 **Senior Software Engineer**
Sep. 13, 2010 – May 31, 2012 **Software Engineer**
Google

I worked across three projects, primarily the [Bazel](#) build system and adjacent test, reporting, and deployment tools. I led a major initiative to provide an end-to-end authenticated build, test, and release pipeline which entailed direct leadership across these teams. I wrote much of the parallel graph traversal, query, and testing logic prior to the release, as well as many internal components. If you've used Bazel, you've run my code. **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. 4, 2011 – April 15, 2013 **Founder, Living Discoveries**
Developed and commercialized [Digital Mammographer](#), a web-based automatic diagnostic system for breast cancer, with above 90% accuracy (higher than an average radiologist) in preliminary studies. Mentioned in [Wired](#).

Dec. 7, 2009 – July 30, 2010 **Data Scientist, dstillery (formerly Media6Degrees)**
Applied ML 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. 1, 1997 – Oct. 1, 2008 **Founder, Metasquarer**
Developed, hosted, and supported [Metasquarer](#), an online game, from the age of 12. Built and maintained a community over 10,000 in size when the Internet was much smaller. Established a feedback pipeline to keep users delighted. 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 two years before it was officially invented.

Education

Temple University Philadelphia, PA

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

Ph. D. in Computer and Information Sciences (ML).

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 West Long Branch, NJ

GPA: 3.96 / 4.00

Rank #1

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).

Recent Speaking Engagements

November 2017

Smart Marketing: Content Discovery in the Age of Rich Media and AI

Spoke on how deep learning and advanced object detection are changing content discovery and promotion.

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!

Other Skills:

- Extremely fast learner, doer and organizer with a wide breadth of knowledge. Fluent English, conversational Spanish, some Mandarin. Strong medical knowledge. Able to read MRIs, splice genes, and construct houses.
- Proficient as a pianist, composer ([music portfolio](#)), and semiprofessional photographer ([500px](#), [Behance](#)).
- 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), hidden bookcase door (2017).