Michael Barnathan, PhD

732-328-8268   michael@barnathan.net

Objective:	To translate empathetic 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, Generative AI, Evolutionary Computation, World-Class Software Development, Contextual Mobile Apps, Internet of Things, Computer Vision, Computer-Assisted Diagnosis.
Press Coverage:	TechCrunch (x2), Wired, Huffington Post, EdSurge, Android Police, HackADay

Technical Knowledge

Programming Languages:	Python, Java, Matlab, TypeScript, JavaScript, Groovy, C++, Perl, PHP, C#
Web Frameworks:	HTML 5 / CSS 3, Ionic, Electron, jQuery, Firebase, Angular 2+ and 1.x, React
ML / Data Science:	dbt, Fivetran, Spark, Tecton, Snowflake, Databricks, Beam, Airflow, BigQuery, recommenders, CNNs, Transformers, 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:	Firebase, MySQL, PostgreSQL, SQLite, Druid, BigQuery, Hive, MS SQL.
System Administration:	"LAMP": Linux, Apache (>100 vhosts), nginx, MySQL, Tomcat, Perl, BIND, SSH, Postfix, Dovecot, amavisd, iptables, cron, syslogd, logrotate, Nagios, Cacti, etc.
Mobile and Desktop:	Android, Ionic, Electron, 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, some synthetic biology, genetic engineering, electrophoresis, PCR, neuroradiology, musculoskeletal radiology.

Employment and Entrepreneurship

May 2021 - Present   **Director of Applied ML, Cash App (Block)**   **Managing 2 Dirs + 11 EMs, 150 MLEs**

- Grew Cash Machine Learning Engineering from 30 people to a globally distributed team of over 150.
- Originated and delivered Cash's ML cloud platform strategy, creating and staffing a 50+ person ML Infrastructure organization to drive this forward. Launched model inference, feature storage, embedding, tooling, explainability, and data engineering systems powering all ML at Cash in under a year.
- Used these systems to drive a successful cloud transformation (AWS + GCloud) across 7+ lines of business.
- Built an outstanding reputation for Cash MLE, turning it into an internal and external talent magnet that attracts employees and even entire teams, enabling this extremely rapid growth.
- Created an MLE career ladder and roadmap; ran hiring, comp, and promo processes. Helped leads develop new leads. Directly hired 5 EMs, a TPM, and >50 MLEs. Mentored 4 IC->EM and 2 EM->Director transitions.

April 2020 – May 2021   **Engineering Manager (Newsfeed), Meta**

Led recommendation infrastructure for Facebook's newsfeed; collaborated with every team that uses the feed.

- **Drove integration of Facebook and Instagram's backend feed recommendation stacks and the inclusion**

of Instagram Reels in the Facebook Newsfeed.
- Balanced dozens of XFN partnerships with overall platform strategy. Created frameworks for use case prioritization, including white glove and self-service tiered support.
- Worked with senior engineers to design a low latency lambda architecture for ingesting features in both online and offline recommendation flows.

Dec. 2018 – April 2020   **TLM: ML Sci, ML Eng, Anticheat, Niantic**   **(Niantic makes Pokemon GO)**
Created and led Niantic's Machine Learning organization. Architected Niantic's GDPR-compliant ML pipeline for petabyte-scale training using Google Cloud. Launched our first complete ML pipeline in two quarters, then given leadership of Anticheat. Platformized cheat detection within Pokemon GO to drive significant latency and accuracy improvements (catching >5m cheaters), exploiting adjacencies between the teams to develop shared infrastructure. Drove a 35% increase in raid pass revenue and an 8 figure ARR lift.

Dec. 2016 – Oct. 2018   **CTO, ViewX**   *Acquired by BuzzFeed*
Co-founded ViewX, an AI-powered video recommendation engine. 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 2015 – Nov. 2016   **CEO, The Mountaintop Program**
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 coordinators from NYU, I recruited and coordinated the activities of 75 mentors over the course of a semester to incubate the projects of about 300 students across 2 under-served NYC schools. The program culminated in a demo day which literally altered the course of many students' lives.

August 2014 – Sep. 2015   **Director of Engineering, Amplify**
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. 2013 – Dec. 2013   **Head of Mobile, 8coupons**
Jan. 2013 – Oct. 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. 2012 – May 2013   **Director of Engineering, Owen Software**
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 5 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 2012 – Sep. 2012   **Senior Software Engineer**
Sep. 2010 – May 2012   **Software Engineer**
                                Google
I worked across three projects: 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.
- Dec. 2011: Led a major three team effort to

- 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.
- 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.

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

Developed, hosted, and supported Metasquarer, an online game. Built and maintained a community of over 10,000 people at the age of 12. Created an O(n) algorithm to find squares within a grid and an alpha-beta 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	**Ph. D.** in Computer and Information Sciences (ML).	**GPA: 3.92 / 4.00**
Aug. 2006 – Aug. 2007	**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).

Other Skills:

- 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 photographer ([500px](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).