NIKHIL BUDUMA

Phone: (408) 219-5981 · **Email:** nkbuduma@mit.edu
Data, Machine Learning, Infrastructure, and Healthcare **Website:** http://nikhilbuduma.com · **Github:** darksigma

EDUCATION

Massachusetts Institute of Technology **Cambridge, Massachusetts**
S.B. in Computer Science and Engineering, Masters of Engineering in EECS, GPA: 5.00/5.00 *Aug 2013 – May 2016*
Selected Coursework: Advanced Machine Learning, Algorithms, Operating Systems, Computer Networks, Network and Computer Security, Complexity Theory, Dynamics of Biomedical Technologies, Distributed Systems, Large-Scale Systems
Teaching Assistantships: Mathematics for Computer Science, Founder's Journey, Fundamentals of Programming

Bellarmine College Preparatory **San Jose, California**
Valedictorian, GPA: 4.75/4.00 (weighted), 4.00/4.00 (unweighted) *Aug 2009 – May 2013*
Selected Coursework: Biochemistry, Organic Chemistry, Neuroscience, Pharmacology, Linear Algebra, Differential Equations, Abstract Algebra

WORK/RESEARCH EXPERIENCE

Sumo Logic **Redwood City, California**
Machine Learning and Metrics Engineer *June 2015 – Present*
- Architected the infrastructure for a real-time cataloging pipeline interfacing with ElasticSearch on Mesos Marathon
- Designing recurrent neural network models for knowledge extraction from software logs
- Analyzed financials to optimize gross margin, designed UI components, and participated in customer meetings

Sparks Labs **San Francisco, California**
Full Stack Software and Machine Learning Engineer *December 2015 – March 2015*
- Built multiple features into the backend, API, and iOS client for the MeRightNow mobile application for the latest release
- Constructed deep learning models to improve organization and delivery of user content

Fitbit Research **San Francisco, California**
Machine Learning and Data Science Intern, Part-Time Research Consultant *Jun 2014 – Oct 2014*
- Used machine learning and signal processing to build next-generation features for the Fitbit platform
- Designed an end-to-end software system that analyzes sleep using and accelerometer readings and photoplethysmography

ACTIVITIES/LEADERSHIP

MIT 100K Entrepreneurship Competition **Cambridge, Massachusetts**
Corporate Sponsorship Leadership Team *Sept 2013 – May 2015*
- Procured corporate sponsorships amounting to over $350,000 in total value annually
- Recruited venture capitalists, lawyers and entrepreneurs to judge all three stages of competition

Sloan Business Club **Cambridge, Massachusetts**
Engineering Leadership Board and Entrepreneurship Initiative Lead *Sept 2013 – Present*
- Hosted product management recruiting events to connect corporate sponsors to MIT students for internships
- Led an entrepreneurship initiative to help students bootstrap and accelerate their ideas into reality

PERSONAL PROJECTS

- **Forge** – Built a graphical programming language and a just-in-time compiler on AWS Lambda to automatically build, deploy, and scale production-ready backend infrastructures *(Top 10 at 2015 Greylock Hackfest)*
- **Traceless** – Built a distributed, cryptographically oblivious messaging server such that any 3rd party (including the server itself) is provably incapable of determining whether two individuals ever had a conversation on the service
- **Pulsar** – Built low-cost microscopy hardware that employs super-resolution techniques to generate high quality images of blood smears and designed deep learning models that identify blood-borne parasites *(2014 MIT 100K Pitch Finalist)*
- **Ad Hoc Localizer** – Modified Intel 5300 WiFi card firmware and designed real-time, distributed nonlinear optimization routines to localize the relative positions of clients in an ad hoc network
- **Hyper_Ink** – Built a sophisticated computer vision iPhone application that allows the real time sharing and annotation of physical pen and paper drawings to enhance virtual collaboration *(Top 10 at 2014 Greylock Hackfest)*
- **ByteMe** – Constructed a homomorphic compression extension to the standard C++ string library to more efficiently store and operate on text during runtime *(Best Hack at 2014 Palantir Performance Engineering Hackathon)*
- **RemembrAll** – Implemented a searchable archival service for live video feed from Google Glass with a parallelized Apache Storm processing engine *(Top 10 at Hack the North; Thiel Foundation Award for Best Hack)*

SELECTED AWARDS

- **Two-time International Biology Olympiad Gold Medalist** – Placed 8th and 17th in the world in 2013 and 2012, respectively
- **National BioGENEius Challenge Winner** – Project on pertussis vaccine selected as one of the top 10 in the nation
- **California State Champion in Public Forum Debate** – First place in the state in 2013; Second place in 2011

PUBLICATIONS

Modulation of Phagocytosis in *Tetrahymena thermophila* by Histamine and the Antihistamine Diphenhydramine. *Acta Protozoologica*, 52(4), 12.

Fundamentals of Deep Learning: Designing Next Generation Artificial Intelligence Algorithms (an O'Reilly book, est. Nov. 2015)

ADDITIONAL SKILLS

Python, Django, Flask, Java, Scala, C/C++, Caffe, Theano, SQL, MongoDB, Mesos, Marathon, JavaScript, Node, HTML/CSS, iOS, MATLAB