



Agni Kumar

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 /agnikumar

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Education

Massachusetts Institute of Technology

Computer Science and Engineering, Mathematics
Class of 2020, **both for B.S. and M.Eng (M.S.)**

Georgia Institute of Technology

Mathematics, 4.00 GPA
Dual Enrollment from 2013 – 2015

Milton High School

Valedictorian (1/444), STAR Student
Class of 2016

Technical Skills

Programming: Python, Java, R, LaTeX, MATLAB, SQL, C/C++, Visual Basic, Mathematica, WebPPL

Applications: Apache Spark, Hadoop, Hive, HTML, CSS, JavaScript, Flask, Keras, Theano, TensorFlow, PyTorch, Microsoft HoloLens, Adobe Premiere Pro

Coursework

- Computer Vision, Cryptography, Applied Combinatorics, Theory of Computation, Inference
- Computation Structures, Design and Analysis of Algorithms, Elements of Software Construction
- Machine Learning, Networks, Database Systems

Projects

Hierarchical RL for Planning | Fall 2018

Developed a Bayesian cognitive model of hierarchy discovery, utilizing both static and dynamic reward mechanisms, to predict chunking of tasks.

Predictive Bracelet | Summer 2018

Built a wearable to help predict, and therefore likely avoid, autistic meltdowns. Used Adafruit's FLORA electronics platform, consumer heart rate sensors, and Bluetooth Low Energy, connected to a stress prediction model and mobile app.

Telehealth Service Demand | Spring 2018

Developed a predictive model for demand forecasting to optimize the distribution of telemedicine resources, improve patient care, and help hospitals decide how much to invest in telehealth services.

Accolades

- Top Honors (rank 1/20,045 participants) in the H&R Block Budget Challenge (2016)
- 2016 Intel International Science and Engineering Fair (ISEF) Finalist, Grand Award in Mathematics
- Siemens Scholar, Google Science Fair Finalist (2015)
- 2014 Actuarial Foundation's Project Math Minds National Winner

Experience

Microsoft | SOFTWARE ENGINEERING INTERN

June 2018 – August 2018 (Cambridge, MA)

- Worked on Microsoft Research's Seeing AI project, to create everyday navigational experiences for the visually impaired (text recognition, currency and product identification, scene descriptions, etc.)
- Added a wearable necklace component, distributed in maker-kit form.

Microsoft | AZURE MACHINE LEARNING INTERN

January 2018 – February 2018 (Cambridge, MA)

- Developed a workflow model in which AI services are initially brought down to virtual machines from the Cloud, one that reduces latency significantly.
- Enabled MMLSpark to call Microsoft's Azure Cognitive Services on Kubernetes with Docker.

Macy's Technology | MACHINE LEARNING INTERN

June 2017 – August 2017 (Johns Creek, GA)

- Developed an anomaly detection model to identify inefficiencies in operations of fulfillment megacenters.
- Created a web app to aid warehouse operations and logging.

Nasdaq | DATA SCIENCE AND MACHINE LEARNING INTERN

January 2017 – February 2017 (Boston, MA)

- Designed and built real-time business performance dashboards for ETFs by employing reinforcement learning algorithms.
- Visualized data with Microsoft HoloLens to extract additional insights.

Gresham, Smith and Partners | DATA ANALYST INTERN

January 2016 – May 2016 (Atlanta, GA)

- Mined and analyzed traffic control data for the city of Montgomery, AL.
- Helped propose Intelligent Transportation System (ITS) initiatives.

Georgia Institute of Technology | RESEARCHER

Department of Mathematics

June 2014 – December 2015 (Atlanta, GA)

- Conducted graph theory research on break divisors of complete graphs.
- Developed and proved a bijection between divisor sequence labels and spanning trees within networks.

New Mexico Institute of Mining and Technology | RESEARCHER

Etscorn Observatory

June 2015 – July 2015 (Socorro, NM)

- Developed a computer simulation program to determine the exact orbit of near-Earth asteroid Magellan (1985 DO2) from self-taken telescope images.
- Published findings with the Minor Planet Center of the *Harvard-Smithsonian Center for Astrophysics*.

Leadership

- Teaching Assistant (TA) for Mathematics for Computer Science (6.042)
- MIT Society of Women Engineers (SWE) Technology Chair
- MIT ProjX External Relations Chair
- MIT Women in EECS Professional Development Chair
- MIT F/ASIP and UPOP member
- Mini-Mathletes Program Founder – led summer math meets and hosted various mathematical events for 300+ students over three years
- Art of Problem Solving (AoPS) forum leader, Georgia ARML, GHP, NCWIT
- 2016 Mu Alpha Theta Governor's Leadership and Service National Award
- Georgia State Senate Resolution 821 adopted on February 9, 2012 in my name recognizing mathematical ability and leadership