Harsh Sikka

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Education

Georgia Institute of Technology — Atlanta, GA
Master's in Computer Science; GPA: 4.00 — *Aug. 2017 – April 2020*

Harvard University — Cambridge, MA
Master's in Biology; GPA: 3.93; Dean's List — *Aug. 2017 – Feb. 2020*

University of California, San Diego — La Jolla, CA
Bachelor's in Cognitive Science; Provost Honors — *Aug. 2013 – Aug. 2016*

Experience

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Research Scientist — San Francisco, CA
OpenMined — *March 2019 - Present*

- **Federated Architecture Search**: Currently researching Meta-Learning methods in the federated setting, including Neural Architecture Search methods for client side model personalization
- **Profiling Federated Algorithms**: Comprehensive profiling of different federated learning and differential privacy algorithms on medical datasets

Applied Scientist — San Diego, CA
Umano Lab — *Jan. 2020 - Present*

- **AR based Digital Therapeutics**: Architected health analytics platform and AR mobile app aimed at improving patient outcome through gamified ambulatory patterns. Pilot Study with UCSD Health
- **Diagnostic ML Models**: Currently researching the applicability of multimodal DL models in diagnosis tasks for various diseases

Research Fellow — Brooklyn, NY
Paperspace Advanced Technologies Group — *Jun. 2019 - Jan. 2020*

- **Neural Architecture Search**: Designed Neural Architecture Search system focused on interpretability, combining Neural Module Networks, Lottery Ticket Pruning and Efficient RL methods.
- **Bayesian AutoML**: Oversaw the development of bayesian search methods for on-device neural networks.
- **Human in the Loop ML**: Researched Human in the Loop machine learning systems, and designed novel interpretable model generation system.

Deep Learning Research Assistant — Cambridge, MA
Harvard SEAS, Pehlevan Group — *Jan. 2019 - Present*

- **Disentangling Representations Theory**: Designed novel cost functions comparing both Probabalistic and Group Theoretic approaches to effective disentangling
- **Generative Models for Disentangled Representations**: Explored the use of Adversarial Networks, VAE, and other models, inspired by the Brain's Ventral Visual Processing Stream

Research Assistant, Machine Learning and Human Computer Interaction — Atlanta, GA
Georgia Tech College of Computing, Lucy Labs — *Oct. 2018 - Present*

- **Predictive Learning System**: Architected and implementing a modular microservices based personal learning and productivity platform. Features include NLP models, internal search, and productivity analytics.

- **Online Informal Learning Communities**: Researched Informal Learning in online communities. Contributed to new typology of online communities, quantitative and qualitative analyses of user behavior, community habits, rules and moderation.

Graduate Teaching Assistant Atlanta, GA
Georgia Tech College of Computing *Jan. 2019 - Present*

- **Technical Mentorship**: Guided and Evaluated technical projects in CS6460: Educational Technology

Founder, Product Lead San Francisco, CA
ModelDepot *Dec. 2017 - Aug. 2018*

- **Model Discovery and Deployment Platform**: Architected Node and Express based microservices for platform backend. Implemented progressive front end using React, React Router, and Semantic UI. Designed, optimized, and recreated numerous DL models.

Lead Editor San Jose, CA
Progress *Jan. 2016 - Dec. 2018*

- **Open Academic Journal**: Started an academic journal focused on developments in Neuroscience and Computer Science, with an emphasis on undergraduate research. Using MIT Media Lab PubPub platform, designed Editorial Process and assembled Board consisting of UCSD Faculty.

Product Management Intern San Jose, CA
Sikka Software *Jun. 2015 - Sept. 2015*

- **HumOS**: Coordinated data driven needfinding, design, and development sprints for HIPAA Compliant Doctor Patient communication app. Implemented diagnostic testing using both optical and haptic mobile phone sensors.

Projects

AutoML Book: Technical Introduction to AutoML and Neural Architecture Search with Manning Publishers.
Pioneer Fellowship: Modular Neural Networks with brain inspired generalized graphs and multiobjective learning rules
Benkyo: Automated Reading Assessment and Fluency Metric application, tested in California Schools.
LearnSearch: Crowdsourced, curated learning search engine and community.
Athena AI: Conversational AI focusing on accessibility and voice based processing

Skills

Programming Languages: Python, Javascript, Java, HTML, CSS, Matlab, R

Frameworks Libraries: NumPy, SciPy, Pandas, BioPython, TensorFlow, Pytorch, Caffe 2, React, React Native, Redux, Vue, Vuex, Angular, Node, Express, Backbone

Databases: MongoDB, MySQL, SQLite, Sequelize, Cloud Firestore, Real Time DB,

Other tools: Bash, Slurm, Git, Grunt, Gulp, Webpack, Firebase, Heroku, Digital Ocean, Trello, Google Analytics

Relevant Coursework

Computer Science: Machine Learning, Knowledge Based Artificial Intelligence, Reinforcement Learning, Artificial Intelligence for Robotics, Machine Learning For Trading, Educational Technology

Biology: Gene Therapy and Gene Editing, Biostatistics, Bioinformatics, Biochemical and Physiological Adaptation of Microbes, Graduate Research Methods and Scholarly Writing in the Biological Sciences, The Biology of Cancer, Neurobiology of Emotion

Cognitive Science: Neuroscience, Human Computer Interaction, Cognitive Ethnography