Gautam Mittal

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EDUCATION

UC BERKELEY
B.S. Electrical Engineering & Computer Science (EECS)
Expected May 2022 | Berkeley, CA
GPA: 3.898 / 4.0
Regents' and Chancellor's Scholar
Accel Scholar, Kleiner Perkins Fellow
Eta Kappa Nu (EECS Honor Society)
Dean's List
CS186 uGSI (database TA) • Cal Hacks
UC Jazz • Statistics Undergraduate Student Association

SKILLS

LANGUAGES
Python • JavaScript • Swift • Java • C
C++ • Go • SQL • Scheme • OCaml
Ruby • RISC-V • x86 • Objective-C

TOOLS
PyTorch • JAX/Flax • TensorFlow
NumPy • Node.js • Flask • Rails • HTML
CSS • React • Max/MSP • AWS • GCP
UNIX • Git • MongoDB • PostgreSQL

LINKS

GitHub: github.com/gmittal
LinkedIn: linkedin.com/in/mittalgautam
Google Scholar: gbm.pw/gscholar
Website: gautammittal.com

COURSEWORK

CS61B: Data Structures
CS61C: Computer Architecture
CS70: Discrete Math & Probability
CS170: Algorithms & Intractability
CS161: Computer Security
CS162: Operating Systems
CS164: Languages & Compilers
CS184: Computer Graphics
CS186: Database Systems
CS188: Artificial Intelligence
CS189: Machine Learning
CS194-26: Computer Vision
CS285: Deep RL (Graduate)
EECS16A: Linear Algebra & Circuits
EECS16B: Diff. Equations & Control
EECS126: Random Processes
MATH53: Multivariable Calculus
CS195: Society & Computing

EXPERIENCE

RISELAB, UC BERKELEY | Student Researcher
September 2019 – Present | Berkeley, CA

- Researching and developing Sky computing systems to enable large-scale multi-cloud ML workloads and deep RL techniques for query optimizers
- Co-implemented system for training a relational query optimizer without expert demonstrations and experimented with generative models, feature perturbation, and planning techniques to improve agent performance
- Co-authored paper (SIGMOD 2022) on learned query optimization
- Co-authored paper on implementing an intercloud broker for Sky computing (under review)

TESLA | Machine Learning Intern, Autopilot
May 2021 – August 2021 | Palo Alto, CA

- Engineering task owner for all offline 2D networks: supported new autolabeling, tracking, simulation, AutoHighbeam, and 3D network efforts
- Implemented SoTA panoptic segmentation, road semantics, and object detection models along with new data, training, evaluation, and visualization infrastructure from scratch
- Contributed to segmentation data engine, helping refine labeling ontology and implement system to improve label quality and diversity
- Presented model to Elon Musk and had internship work demoed by Autopilot leadership at AI Day 2021 (see 1:11:19 & 1:31:30 on livestream)

GOOGLE | Research Intern, Google Brain
May 2020 – January 2021 | Mountain View, CA

- Researched deep energy-, score-, and diffusion-based generative models for symbolic music generation under the Magenta team
- Designed two-stage non-autoregressive model for unconditional generation and gradient-based sampling for post-hoc infilling
- Implemented and evaluated Transformer-based models, fast sampling mechanisms, and MusicVAE data pipelines with JAX, Flax, and TensorFlow
- First author paper (ISMIR 2021) on diffusion models for musical sequences

STRIPE | Software Engineering Intern
May 2019 – August 2019 | San Francisco, CA

- Built an end-to-end data export pipeline for Connect, used daily by Lyft, DoorDash, and others to process millions of financial objects
- Overhauled infra to improve performance, consistency, and security

Earlier professional experience is available at linkedin.com/in/mittalgautam.
Additional open-source work and projects available at github.com/gmittal.
All available publications and preprints can be viewed at gbm.pw/gscholar.

AWARDS

2019 IEEE Eta Kappa Nu Member (top 25% of Berkeley EECS)
2019 Accel Scholar (run by Accel Partners & Berkeley EECS)
2019 Kleiner Perkins Engineering Fellow
2018 Regents' and Chancellor's Scholarship (top 2% of incoming class)
2018 US Marine Corps & Louis Armstrong Jazz Awards
2015 Top 10 at MHacks, PennApps (international hackathons)
2015 Apple WWDC Scholarship