

# Gautam Mittal

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## EDUCATION

### STANFORD UNIVERSITY

M.S. Computer Science  
Dec 2023 (expected) | Stanford, CA

### UC BERKELEY

B.S. Electrical Engineering &  
Computer Science (EECS)  
May 2022 | Berkeley, CA  
GPA: 3.9 / 4.0  
Regents' and Chancellor's Scholar  
Accel Scholar, Kleiner Perkins Fellow  
Eta Kappa Nu (EECS Honor Society)  
Dean's List (3x)

## 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

## 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  
CS251: Blockchain & Cryptocurrencies  
CS285: Deep RL (Graduate)  
CS330: Meta Learning (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 – May 2022 | 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 (**NSDI 2023**)

### 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](https://www.linkedin.com/in/mittalgautam).

Additional open-source work and projects available at [github.com/gmittal](https://github.com/gmittal).

All available publications and preprints can be viewed at [gbm.pw/gscholar](https://gbm.pw/gscholar).

## AWARDS

2022 Warren Y. Dere Design Award (top EECS senior for engineering design)  
2022 Interact Fellow  
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