

ARNAV DANDU

☎ 412-627-9562 ✉ adandu@ucsd.edu [in linkedin.com/in/arnavdandu](https://www.linkedin.com/in/arnavdandu) github.com/arnavdandu

EDUCATION

University of California San Diego

B.S. Computer Science, B.S. Mathematics

August 2022 – June 2026

La Jolla, CA

RELEVANT COURSEWORK:

- **Computer Science:** quantum computing, data structures and algorithms, complexity theory, computer vision, computer graphics, computer architecture
- **Mathematics:** linear algebra, numerical analysis, probability, vector calculus, differential equations, discrete math, abstract algebra, real analysis, graph theory, combinatorics
- **External courses:** Deep Learning Specialization (DeepLearning.AI), Multi-GPU Accelerated Computing with CUDA C/C++ (NVIDIA Deep Learning Institute)

HONORS:

ServiceNow Scholar

- Among nine undergraduates at the Jacobs School of Engineering at UCSD selected as recipients of the ServiceNow scholarship.

EXPERIENCE

Department of Mathematics, UC San Diego

September 2024 – Present

Undergraduate Researcher

- Contributing to the formalization of advanced mathematical theorems in the Lean proof assistant.
- Currently formalizing the Auslander–Buchsbaum theorem in commutative algebra for integration into the mathlib library.

IBM Accelerate

June 2024 – July 2024

Research Track

- Participant in the research track of the IBM Accelerate program, exploring innovations in AI, semi-conductors, and quantum computing.
- Participated in workshops and seminars to further knowledge in various IBM research areas.

Aesthetic

October 2023 – March 2024

Machine Learning Engineer Intern

- Fine-tune CLIP embedding models to improve domain-specific vector search accuracy.
- Implement multimodal AI models to extract outfits from images using image segmentation.
- Fine-tune diffusion models with Dreambooth and LoRA to generate photorealistic portraits of users in various fashion styles.

CuraStone Corp.

August 2023 – January 2024

Research Scientist Intern

- Developed a LangChain-based tool to generate study materials from user provided textbooks and notes.
- Conduct comprehensive literature reviews and research on state-of-the-art AI/ML technologies.
- Led development of novel multimodal AI models to process domain-specific video content for efficient and accurate summarization.

SKILLS

- **C/C++, Python, Java, C#, Haskell, \LaTeX**
- **Formal Methods** with Lean and Coq
- **Deep Learning** with TensorFlow and PyTorch
- **NLP, Computer Vision, Generative AI**
- **Parallel Computing** with NVIDIA CUDA
- **Graphics Programming** with OpenGL
- **Quantum Computing** with Qiskit
- **App Development** with Flutter, Firebase

PROJECTS

Ray Tracer | *Computer Graphics, C++*

- Ray tracer written in pure C++, complete with custom matrix multiplication library. Produces ray traced image given scene description. Utilizes bounded volume hierarchy to accelerate scene rendering.

Emotion Detecting Messaging App | *Flutter, Firebase, IBM Watson NLP API*

- Earned **1st** place out of 29 teams in the FCHacks hackathon; addresses gaps in textual emotion recognition by parsing incoming messages through the IBM Watson NLP API and displaying the perceived emotion with a Flutter frontend.

SERVICE

Teacher | *UCSD Engineering Outreach*

- Created and taught lessons on important computer science topics such as cryptography to students in underprivileged elementary, middle, and high schools in the San Diego area with the hope of sparking interest in the next generation of engineers.