

# ANANT KHADELWAL

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## EDUCATION

### Georgia Institute of Technology

December 2026

BS Computer Science and Math

GPA: 4.0

**Relevant Coursework:** Artificial Intelligence, Machine Learning, Data Structures and Algorithms, Advanced Linear Algebra, Differential Equations, Statistics, Complex Analysis, Discrete Math, Physics, Electronics, Chemistry, Biology.

## TECHNICAL SKILLS

**Languages:** Python, C++, C#, Java, HTML/CSS/JavaScript, Rust, LaTeX, SQL, Mathematica, Matlab, Bash.

**Developer Tools:** Vim, VS Code, Eclipse, Android Studio, Arduino, Onshape, LaTeX, ArcGIS, Jira.

**Frameworks:** PyTorch, TensorFlow, NumPy, Pandas, OpenCV, Node.js, NLTK, .NET, HuggingFace, SpeechBrain, PostgreSQL.

**Technologies:** AWS, Azure, Windows, Linux (Ubuntu, Debian, RHEL), GitHub, MS Office.

## EXPERIENCE

### AI Engineer Intern | Parsons Corporation

May 2024 – Present

- Built ensemble Actor-Critic LLM system for ParsonsGPT, allowing users to utilize both GPT4 and LLaMA-3 generative agents with Retrieval Augmented Generation (RAG), **increasing performance by 10%**.
- The Beta version has **1,800 employee users and saves \$170,000 a year** while only costing several thousand.
- Created sharing system on Azure for Retrieval Augmented Generation with 2,000 total documents

### Machine Learning Engineer | Vytal.ai

Mar 2024 – Present

- Developed state-of-the-art gaze tracking software with medical and advertising applications at VC-backed startup.
- Made neural network 30x faster** and real-time feasible by batching inputs and translating the model with ONNX and deployed pipeline to an AWS EC2 instance and Python library.
- Created new geometric approach to iris detection that was **15% more accurate** than previous version.

### Research Intern | FOCAL Lab at University of Illinois Urbana-Champaign

Mar 2023 – Aug 2023

- Created new way to adversarially attack images to prevent deepfake models from altering them by changing particular pixels by negligible amounts to fool a deepfaker.
- Made current methods **14% more effective** while preserving efficiency.

### Research Intern | ML Lab at George Mason University

Oct 2022 – Present

- Ran 20+ experiments on mathematical optimization in federated learning and distributed training of neural networks.
- Currently studying the effects of progressive sharpening and working towards publication.

## AWARDS, PAPERS, AND PROJECTS

### CloudGen: Generating 3D CAD models using AI

Jan 2024

- Finetuned 3D diffusion model for high structural stability by filtering a dataset of 800,000 3D models for high quality and optimizing the network on 4 A100 GPUs.
- Designed novel way to alter generated prints by dynamically reversing and rerunning the generative diffusion process.
- Won **First Place in Category at Regeneron International Science and Engineering Fair (top 25 of millions)**.

### Accepted Paper to ICEEE (15% acceptance rate)

Oct 2023

- Coauthored paper–*Tachyon: A Programmable Optoelectronic Hardware Accelerator for Ultrafast Tensor Arithmetic*.
- Developed optical chip and compiler that outperformed the Google TPU on matrix multiplication with analog signals.

### Submitted Paper to NeurIPS 2023 Workshop on Regulatable ML

Aug 2023

- First author on paper–*Approaching Questions in Regulating Generative AI through a Technical Lens*.

## LEADERSHIP

### Co-Founder | SPRING Institute

Feb 2023 – Feb 2024

- Co-founded advocacy group and oversee 25+ chapters, 12+ publications, and 250 members internationally.
- Worked with UN Advisory Board on AI, UK Minister of Science, US Senator Raphael Warnock, etc.**

### Data Analyst | Arlington Democratic Party

Oct 2022 – July 2023

- Webscraped voting data from 54 precincts and 9 zip codes with 100,000 entries and found patterns for voter outreach.
- Presented results to audience of **70+ state senators and officials**, informing county turnout efforts for next 6 years.