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Ansh Agrawal

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anshag01

EDUCATION

University of Toronto **09/2021 – 04/2026**
HBSc: Computer Science (AI) · 3× Dean's List · GPA 3.85/4.00 *Toronto, Canada*

National University of Singapore **01/2024 – 05/2024**
Semester Exchange Program *Singapore*

Coursework: Deep Learning, Operating Systems, Data Structures, Systems Programming, Artificial Intelligence, Machine Learning, Computer Vision, Computational Probability & Statistics.

ACADEMIC RESEARCH

Machine Learning Researcher **06/2026 – Present**
University of Toronto *– Prof. Uzma Maroof* *Toronto, Canada*

- Extended **TSA-WF** to identify websites from progressively longer partial Tor traffic traces.
- Developed prefix-aware distance features and confidence thresholds for early or deferred classification.

Machine Learning Systems Researcher **05/2026 – 08/2026**
University of Toronto *– Prof. Bogdan Simion* *Toronto, Canada*

- Built a **CSC369 CPU scheduling simulator** with **FCFS, SJF, STCF, RR & MLFQ**.
- Profiled CPU scheduling & load balancing with **perf, pidstat, trace-cmd & KernelShark**.

LLM Robotics Researcher **08/2024 – 03/2025**
MEDCVR *at UofT* *Toronto, Canada*

- Designed a **multi-agent** robotics application with VLMs & LLMs for autonomous surgical tasks.
- Developed high-level motion planning, low-level action functions & deployed code on **Franka Emika** robot.

WORK EXPERIENCE

Software Engineer, Applied Machine Learning **07/2026 – Present**
Autodesk *Toronto, Canada*

- Building an **MCP-based agent** for tool execution, scheduling, self-correction, & workflow verification.
- Training, evaluating, & deploying **ML models** to improve product behavior.

Teaching Assistant **09/2024 – present**
University of Toronto *Toronto, Canada*

- Current TA for **CSC148 (Intro to Computer Science)**; previously TAed **CSC207 (Software Design)** & **CSC209 (Systems Programming)**; supported **500+** students through labs, grading, & office hours.
- Created **adventure game** assignment for **CSC207** & test suite, reducing grading time by **50%**.

Machine Learning Engineer **05/2025 – 08/2025**
Autodesk *Toronto, Canada*

- Built an **agentic package-management chatbot** with **Rasa**, backend APIs & feature-flagged **JWT auth**, achieving **90%** action accuracy & projected **$6.7M/year** in customer time savings.
- Prototyped **RAG** across **1000+** package configs using **semantic similarity**, improving lookups by **10×**.

Software Engineer **09/2024 – 04/2025**
Thomson Reuters *Toronto, Canada*

- Resolved **20** production issues & migrated **C#** backend services, improving platform stability by **15%**.
- Managed **monthly releases**, cherry-picking cross-functional changes, ensuring **98%** on-time delivery.
- Developed **25** SQL scripts to fix bugs & deliver features for **20,000** customers across seven environments.

Software Engineer **05/2024 – 08/2024**
TD Bank *Toronto, Canada*

- Built the "Maintain Holiday" webpage for the Registered Products Database using **Spring Boot** & **Angular**; automated regression tests with **Selenium**, reducing test time & saving **$25,000/year**.

Software Engineer **05/2023 – 08/2023**
Nokia *Toronto, Canada*

- Built & tested **Java iSIM features**, enabling Airtel to monitor **100 million** users.

SKILLS

Languages: Python, Java, C, C#, SQL, JavaScript
Machine Learning: PyTorch, Transformers, Scikit-learn, Fine-Tuning, Post-Training, Reinforcement Learning
AI Agents & Retrieval: MCP, RAG, VLMs, Embeddings, Semantic Search, Vector Search, FAISS, LLM Evaluation
ML Systems & Infrastructure: Linux, KVM, Docker, AWS, Modal, Weights & Biases, FastAPI

PUBLICATIONS

- M. Mittal, S. Deolia, H. Chaturvedi, ..., **A. Agrawal**, et al., "Ten-Year Survival Outcomes of Oral Cancer Patients in a Private Cancer Center of Central India," submitted to *Indian Journal of Surgical Oncology*, 2026.
- A. Agrawal, "From Attention to Application: The Evolution of Transformer Models & Their Impact on Modern Healthcare & Cancer Research," submitted to *J. Mach. Learn. Res.*, 2025.

PROJECTS

NanoChat LLM Training & Post-Training

- Trained & evaluated **560M-parameter NanoChat** on **ClimbMix-400B** with **Modal** & **W&B**.
- Built a **long-context eval** to test model performance as context length increased from **512** to **2048** tokens.
- Improved **NanoChat** post-training with reward shaping, raising **ChatCORE** from **0.3226** to **0.3681**.

ReCall.ai - HackPrinceton 2024 Winner — 12/2024

- Built smart glasses that use **facial recognition** to identify conversation partners & **LLMs** to summarize past interactions with them. Won the **Patient Safety Challenge** & **Diagnosis Consort** among 100 teams.

Watchful.AI - PennApps XXV Hackathon Winner — 09/2024

- Developed an **AI safety system** using **CLIP**, **VLMs**, & a **vector database** to analyze CCTV feeds for weapon-related threats & alert campus security in real time. Won **Best Privacy/Security Hack** & **Most Technically Complex Hack** among 104 teams.

EXTRACURRICULARS & LEADERSHIP

Vice President, Infrastructure — **07/2026 – Present**
University of Toronto Machine Intelligence Student Team — *Toronto, Canada*

- Co-leading a **16-person team** building shared GPU infrastructure, job scheduling and deployment tools.
- Secured **USD 10K/year in compute credits from Modal** for **50+ ML projects** & **500+ developers**.

Founder — **05/2025 – 06/2026**
ClearSite.ai → Tarazoo — *Toronto, Canada*

- Founded **ClearSite.ai**, winning **CAD 150,000** from UofT Hatchery for AI website accessibility fixes.
- Built **Tarazoo**, a procurement agent, signed **4 customers**, and interviewed with **YC**, **a16z Speedrun**, **Pear VC**, and **Entrepreneur First**.

Director of Sponsorship — **05/2025 – 05/2026**
UofT AI — *Toronto, Canada*

- Led **20** members to raise **CAD 40,000** for ConferenceX, Canada's largest undergrad AI conference.
- Managed outreach, mentored members, & met sponsors to negotiate & close sponsorship deals.

Competitive Programming — **09/2025 – 11/2025**
International Collegiate Programming Contest — *Toronto, Canada*

- Represented UofT at the **ICPC North America East Central Regional**.

Hackathon Judge & Mentor — **05/2025 – 08/2025**
Independent Judge & Mentor — *Toronto, Canada*

- Judged & mentored teams at Hack404 & **Ignition Hacks** on ML & system architecture.

AWARDS

- **UofT Scholarships:** International Scholar - CAD 180,000, top 3% international admits; Principal's Entry - CAD 12,000, merit-based; UofT Scholar - CAD 7,500, merit-based; International Experience - CAD 6,000.
- **PennApps XXV** - Best Privacy/Security Hack & Most Technically Complex Hack.
- **HackPrinceton** - Diagnosis Consort by BGB Group & Patient Safety Challenge.
- **UofTHacks X** - Co:Here Best Build with Cohere Challenge.
- **DeerHacks** - Best Usage of UiPath Products.