

# Savir Singh

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## EDUCATION

### University of Toronto

Honours Bachelor of Science

Toronto, Canada

2025 – 2029

- Intending to pursue Computer Science + Mathematics double major
- Relevant coursework: Advanced Theoretical Calculus With Proofs, Advanced Linear Algebra, Introduction to Computer Science, Mathematical Expression and Reasoning for Computer Science, Introduction to Statistics and Data Science

## EXPERIENCE

### General Robotics

Software Engineer Intern, AI Model Research

Kirkland, USA

September 2024 – December 2024

- Worked with engineering mentor/team to expand the robotic perception system by adding 3 new ML models
- Implemented action recognition model classifying actions as positive/negative using IBM PyTorch library; ensured data quality and developed data classification system for robotic sensor data to streamline model selection and feature tracking
- Enhanced visual odometry model by 15% by implementing Princeton's Deep Patch Visual Odometry (DPVO) pipeline

### University of Waterloo

Software Engineer Intern & Student Researcher

Waterloo, Canada

January 2024 – April 2024

- Worked with a team of 2 PhD students and a professor on a software security project, FuzzSlice
- Participated in technical sessions to learn and implement best practices for code quality; reduced demo prep time by 60%
- Added support for C++ repositories to the project; increased dataset coverage by 30% and improved input quality
- Built Python Flask + React.js web app and demo video used in the ICSE 2024 (Portugal), viewed by 2,000+ attendees

### American Inn Ozark

Backend Engineer Intern

Ozark, USA

June 2023 – September 2023

- Wrote automation scripts that reduced update delays from 30 minutes to under 2 seconds and reduced wait times by 35%
- Developed a Python Flask reservation system with real-time input sanitization and classification to ensure data quality

## PROJECTS

### Math Contest Repository

October 2023 – Present

🌐 mathcontestrepository.pythonanywhere.com

- Built an online math contest platform that boasts 500+ registered students, 700+ community members, and 1,400+ problems, generating 10,000+ monthly impressions, partnered with Desmos to add online calculators
- Added leaderboard, automated data classification, and problem type tagging for user personalization

### Clonio AI

May 2024 – Present

📱 Clonio AI

- Developed an iOS app turning users into AI chatbots based on previous chat logs; top 25 on North American/Swiss App Stores in productivity category, achieved 200+ downloads in first week; processed over 100,000 messages
- Implemented fine-tuned Gemini backend and performed user data classification for fine-tuned LLM persona generation, improving first-use retention by 90%
- Interviewed by Village Media, featured on 10+ news sites, and awarded a \$3,500 Ontario government grant

### Independent Research

April 2024 – Present

- Investigated the Odd Perfect Number (OPN) conjecture; independently derived Euler's result on their form
- Prototyped algorithm with Carnegie Mellon professor to develop heuristics for generating addition-subtraction chains
- Conducted data analysis for number theory datasets to support heuristics and algorithm validation

### Volcano Judge

October 2022 – January 2023

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- Developed online judge platform supporting Python/C++ to teach algorithmic thinking
- Implemented sandbox for Python programs to secure the platform, built a RESTful API for grading technology
- Designed a secure grading system, including automated data validation via comparison checks for student submissions

## ACHIEVEMENTS

Top 5%, Canadian Computing Competition (Senior)

2024-2025

3x First Place & Internship Invitee, PEO Mississauga Chapter High School Coding Contest

2021-2023

\$200 Second Place Prize From Replit, Hack the North '23 (for building BYTESense)

2023

Gold Medal (2023) & Silver Medal (2025), Halton Skills Coding Competition

2023, 2025

## SKILLS

**Languages:** Python, C/C++, R, Java, SQL, HTML, CSS, JavaScript, Swift

**Frameworks/Tools:** Flask, Django, React.js, Git, Linux, Docker, Tensorflow, SciPy, PyTorch, NumPy, Pandas, Matplotlib

**Concepts:** Algorithms & Data Structures, Security, LLMs, Simulation, ML Inference, Data Pipelines, Debugging

**Data Management:** Data Quality, Master Data Management, Data Cataloging, Data Classification, Input Sanitization

**Personal Skills:** Quick problem-solving, strong communication & interpersonal skills, teamwork