Anish Reddy
Software Developer

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Technical Skills

Languages & Libraries	C/C++, Python, JavaScript, HTML/CSS, React, PyTorch, FastAPI, SQL, NoSQL
Areas of Expertise	Software research & prototyping, UX design patterns, Web assembly, Embedded systems development, Full-stack development, Memory Management, System optimization, Research methodology, CI/CD
Frameworks & Tools	Git, Docker, Jenkins, Azure, AWS, Hugging Face, MongoDB

Professional Experience

Software Engineering Intern   **Apr 2024 — Present**
OCAS   *Waterloo, ON*
- Engineered research prototypes for AI advisor system using C++ backend for optimal performance.
- Designed and optimized scalable back-end system architecture for querying 10,000+ programs with 85% latency reduction.
- Implemented containerized microservices using Docker, enabling modular deployment on Azure with comprehensive testing.
- Scaled recommendation system from Llama 3 8B to Azure OpenAI, achieving 3x accuracy via prompt optimization & A/B tests.
- Designed real-time user profiling through optimized LLM prompts & validation chains, powering contextual recommendations.

Software Engineering Intern   **Sep 2023 — Apr 2024**
SMART Centre   *Waterloo, ON*
- Fine-tuned & optimized a C++ dialogue model for microcontroller deployment, achieving natural conversations with minimal latency.
- Led research on embedded systems optimization, reducing inference latency by 80% through quantization & pruning techniques.
- Developed and deployed lightweight APIs for embedded systems research, ensuring smooth, low-latency operations.
- Conducted iterative prototyping and UX research to optimize embedded system interfaces.

Executive Lead   **Nov 2023 — Present**
Google Developer Groups - On Campus   *Waterloo, ON*
- Led research-focused workshops on C++ optimization and system design for 200+ student developers.
- Organized technical events and collaborative projects, fostering innovation and practical skill development.

Notable Projects   *Project Portfolio* ‹/›

Aqua Pinion | Drowning Detection and Prevention Chest Strap - C/C++, SVM, Sensor Fusion, TinyML, scikit-learn, Python, CAD
- Designed a sensor-driven wearable to detect drowning with 95% precision and deploy a life-saving inflatable.
- Engineered sensor data ingestion and processing pipelines in C++ for real-time anomaly detection on microcontrollers.

Embeddium | Vector Embedding Desktop Application - PyQt5, Transformers, GPU Optimization, Python, Hugging Face
- Developed a cross-platform desktop application with optimized data pipelines, enabling efficient handling of large datasets.
- Implemented multi-threaded C++ backend for GPU-accelerated data pipeline optimization

Typez | AI-Driven Typing Improvement Tool - Local models, scikit-learn, PyTorch(Win), MLX(Mac), Python, Pandas, SQLite
- Built an AI-powered typing analyzer that tracks user patterns & generates personalized exercises targeting specific weaknesses.
- Implemented a keystroke pattern recognition system using ML, enabling a 30% average improvement in typing proficiency.

Activities & Leadership

Conestoga Computing Society | President & Founder   **Sep 2024 — Present**
- Founded a 300-member CS community, hosting 10+ events/workshops to enhance skills and foster campus-wide collaboration.

ConHacks - Hackathon | President & Co-Founder   **May 2023 — Present**
- Initiated, planned, and executed a 130-participant hackathon, managing logistics, marketing, and operations to drive innovation.

Peer-Assisted Learning Leader & Tutor   **Mar 2023 — Present**
- Led tutoring sessions on C adn C++ Programming for 25+ students in DSA, OOP, and core CS topics, improving overall grades by 45%.

Atal Tinkering Lab | Student Lead   **Feb 2018 — Aug 2020**
- Collaborated with 150+ students on IoT and ML projects, winning 4 awards at national and international science & tech expos.

Education

Bachelor of Computer Science (Honours)   **Aug 2026 (Expected)**
Conestoga College, Waterloo, ON   GPA: 3.84

Awards and Achievements

Mentor: Hack The North 2024, Hawk Hacks, GDSC Hacks | **Judge**: GDSC Hacks, ConHacks | **Winner**: HackThe6ix | CSI Service Award |
Member of Program Advisory Committee: School of Applied Computer Science and IT | **Guest Speaker**: GDSC, Queens University |
Google DevFest Volunteer | Co-op Peer Mentor | **Student Innovator of the Year**: Atal Labs | Gold Medal: FGSI | NIRD RISC: 1st Place |