Agastya Sharma

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EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Arts in Computer Science (GPA: 3.83/4.00)   *2025 – 2030*
- **Awards**: President's Scholarship of Distinction; Michael Egan Entrance Scholarship in Computer Science

WORK EXPERIENCE

Sylphia Consulting Inc.   Sep. 2025 – Present
Full Stack Developer   *Toronto, ON*
- Lead a team of 5 interns to design, develop, and deploy 3 production projects within 4 months
- Develop a full-stack web application using Next.js (React), Redux, Node.js, and PostgreSQL for nutrition analysis
- Integrate REST API using Express.js and FastAPI to handle 10K+ requests with a <200ms response time
- Build CI/CD pipelines using GitHub Actions to automate unit and integration testing, reducing test time by 50%
- Containerize and deploy application services using Docker and Kubernetes on Vercel and AWS
- Train and deploy custom machine learning models for computer vision and feature recognition
- Implemented asynchronous task queues with Celery and Redis to efficiently process high-volume background jobs

Steel City Codes Ontario (SCCO)   Jun. 2022 – Jul. 2024
Founder and Technical Curriculum Lead   *Brampton, ON*
- Scaled the educational program to 100+ students across two terms, achieving an 82% retention rate
- Designed curricula for assignments in Python, Java, HTML/CSS, and JavaScript, with custom exercises
- Automated assignment testing and validation using JUnit, Jest, and Pytest to reduce testing time
- Led technical workshops for diverse audiences, effectively communicating core software concepts and best practices

FEATURED PROJECTS

Nutrition Application | *Next.js, TypeScript, ShadCN, PyTorch PostgreSQL*   Sep 2025
- Created a full-stack Next.js web application using for calorie tracking with personalized insights
- Developed a custom CNNs in PyTorch for multi-dish image classification and depth estimation
- Built OAuth 2.0-secured RESTful APIs using Node.js for uploads, analytics, and PostgreSQL data management.
- Integrated multiple external APIs for real-time nutritional data and generate dynamic suggestions using Redis
- Deployed the application on AWS with Docker for containerization and a CI/CD pipeline with automated testing

Oil Price Prediction Model | *Python, Pandas, NumPy, Scikit-Learn, PyTorch*   Jan 2025
- Developed an end-to-end machine learning pipeline to forecast WTI crude oil prices using time-series modeling
- Implemented hybrid CNN-LSTM and GRU architectures in PyTorch to capture spatial-temporal dependencies in historical price and feature data
- Evaluated model performance (RMSE, MAE, confidence intervals) and iteratively tuned model parameters

3D ASCII Renderer | *Python, NumPy, Linear Algebra, Parametric Surfaces*   Dec 2024
- Created a real time 3D renderer that projects parametric surfaces onto 2D ASCII art with dynamic lighting
- Derived parametric equations for torus surfaces using circular parametrization and applied orthogonal transformations
- Implemented perspective using depth-based coordinate mapping with a z-buffer for efficient occlusion culling
- Computed surface normals via partial derivative cross products and calculated illumination intensities through dot product operations

TECHNICAL SKILLS & AWARDS

Languages: Python, JavaScript/TypeScript, Java, C/C++, SQL (PostgreSQL)

Frameworks & Libraries: React, Next.js, Node.js, Flask, FastAPI, Redux, PyTorch, JUnit, Pytest

DevOps & Cloud: Docker, Kubernetes, CI/CD (GitHub Actions), Redis, AWS, Vercel

Data & APIs: Pandas, NumPy, Matplotlib, Seaborn, RESTful APIs, OAuth 2.0

Awards: Incubator Hacks Winners, International Diamond Challenge Qualifiers, 2X Provincial & Regional Champion in DECA, Continental finalists in the PGCC Competition, Winners of Tech Under 20 (TU20)