Karanveer Sidhu

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SUMMARY OF QUALIFICATIONS

Computer Science Co-op student with strong skills in data science, programming, and full-stack development. Experienced in Python, SQL, and Java for data analysis, visualization, and machine learning. Proficient with tools like Power BI, Tableau, and TensorFlow to turn complex data into actionable insights. Hands-on experience building AI models, creating interactive dashboards, and developing web applications using React, Django, and PostgreSQL. Quick learner with proven ability to work in both research and industry projects.

TECHNICAL SKILLS

- **Programming Languages:** C, Java, Python, JavaScript, HTML/CSS, SQL (Postgres)
- **Development Tools:** GitHub, GitHub Actions (CI/CD), Microsoft Visual Studio, VS Code
- **Testing Automation**: Pytest, Unit Testing, Automated Test Scripts
- **Frameworks & Libraries:** React, Django, Flask, scikit-learn, pandas, NumPy, Matplotlib
- **Tools & Methodologies:** Jira, MS Office, MS Visio, Docker, Scrum, Figma, OpenProject, PyTorch, TensorFlow, OpenCV, scikit-learn

EDUCATION

Bachelor of Computer Science (Honours) Co-op September 2023 – April 2027
University of Windsor, Windsor, ON
Minor: Mathematics CGPA: 3.7/4.0 Achievements: Dean's List

PROFESSIONAL EXPERIENCE

Research Assistant – Latent Aspect Detection (LADy Framework) April 2025 – Present
School of Computer Science, University of Windsor, Windsor, ON, Canada

- Contributed to the development of LADy, a Python-based framework for latent aspect detection in customer reviews, supporting both canonical and latent aspect modeling approaches.
- Integrated benchmark datasets (e.g., SemEval, Google Reviews) and configured preprocessing pipelines for multilingual and multi-domain sentiment analysis.
- Implemented, tested, and compared aspect detection algorithms using object-oriented design to enable modular experimentation and extensibility.
- Evaluated model performance through precision, recall, and F1-score metrics, and documented experiments to support reproducibility and future integration.

Artificial Intelligence Intern January 2025 – April 2025
Glendor Inc, Draper, UT, United States

- Collaborated with a team to evaluate open-source object detection algorithms, leveraging the Segment Anything Model (SAM) & YOLOv8 to extract slide labels & handwriting from pathology images.
- Developed a Python-based framework for processing Whole Slide Images (DICOM, SVS formats) & integrating AI-driven object extraction models using PyTorch, OpenCV, enhancing image processing.
- Assessed deep learning models detecting PHI in pathology images with TensorFlow, NumPy, Matplotlib.

Teaching Assistant September 2024 – April, 2025
School of Computer Science, University of Windsor, Windsor, ON, Canada

- Mentored 50+ students in C programming, including pointers, memory management, data structures, & algorithms, while being recognized for strong communication skills & effective teaching.

PROJECTS

Machine Learning Engineer Intern February 2025 – April, 2025
AIModels Tech Inc, New Westminster, BC, Canada

- Developed & implemented an AI-driven predictive maintenance solution for data centers, leveraging LSTM networks & CNNs to optimize real-time monitoring & reduce operational downtime.
- Developed predictive models to analyze maintenance needs, enhancing infrastructure efficiency.

Database Management Specialist Intern January 2024 – March 2024
Digital Human Library, Remote

- Played a key role in Phase 2 of the project by researching & adding 200-300 high-quality virtual tours & VR experiences, significantly expanding database to improve user engagement & accessibility.
- Used MySQL & phpMyAdmin to troubleshoot, optimize, & resolve complex database issues.

E-commerce Website April 2024 – September 2024
- Designed UX/UI in Figma, creating interactive wireframes for seamless navigation.
- Built a full-stack app with React (frontend) and Django (backend), using PostgreSQL for dynamic data.

PROFESSIONAL DEVELOPMENT & VOLUNTEER EXPERIENCE

NASA International Space Apps Hackathon October 2024
- Developed a dynamic crop ranking system to predict harvest yields based on location-specific factors.
- Used Java, JavaScript, & Google Maps to create an interactive & data driven web analytics platform.

Head Start Volunteer, University of Windsor January 2024 – September 2024
- Assisted with Welcome Week at the University of Windsor, helping new students transition smoothly

CERTIFICATIONS

Microsoft Azure Machine Learning Model Manipulation January 2025 – March 2025
Technology: Microsoft Azure Machine Learning (Cloud)
- Built, trained, & deployed machine learning models on datasets through the creation of data pipelines

Natural Language Processing Large Language Models April 2025 – August 2025
Technology: Python, Hugging Face Transformers, PyTorch, spaCy, NLTK, BERT-based models
- Completed a 10-week workshop series covering NLP fundamentals, transformer architectures, text encoders, and large language model applications.