

Farrell Sidadolog

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TECHNICAL SKILLS

Languages: SQL, Python, Java, C, R, HTML/CSS, MIPS Assembly

Developer Tools: Git, Power BI, VBA

Libraries: pandas, NumPy, csv, Matplotlib, scikit.learn, PyTorch, Plotly Dash, LangChain

EDUCATION

University of Toronto

Toronto, ON

Honors Bachelor of Science in Computer Science and Data Science (Specialist), Focus in AI May 2028 (Expected)

- **Relevant Coursework:** Multivariable Calculus, Linear Algebra, Statistics, Computer Architecture, Data Structures and Analysis, Data Science
- **Awards :** Dean's List 2025, BIM Full Ride Scholarship

EXPERIENCE

Research, Strategy, and Operations Associate

Aug. 2025 – Present

PERMIKA Toronto

Toronto, ON

- Appointed under the General of the Republic of Indonesia in Toronto to support strategic initiatives for for a community of over 500 students
- **Data-Driven Evaluation:** Conducted data collection, cleaning, and visualization to evaluate event impact and identify engagement trends for the Indonesian student community.
- **Operational Optimization:** Designed and implement internal workflow systems for task tracking and progress reporting to improve team coordination.
- **Strategic Reporting:** Developed feedback frameworks and guidebooks to enhance operational efficiency and program continuity.

PROJECTS

MacroMap (Global Trade Network Explorer) | *Python, NetworkX, Plotly Dash, Pandas* April 2025 – Present

- Developed an interactive web dashboard using Plotly Dash to visualize and analyze over 27,000 global bilateral trade relationships from 2023.
- Applied network algorithms including disparity filtering for edge reduction and the Louvain method to accurately detect and map distinct economic community blocs.
- Computed key trade dependency metrics (HHI, trade-to-GDP, eigenvector centrality) to identify central trade hubs and evaluate national economic vulnerabilities.

Toronto Rent & Insurance RAG Pipeline | *Python, LangChain, ChromaDB, GPT4All* April 2025 – Present

- Built a local Retrieval-Augmented Generation (RAG) system to query complex legal documents regarding Toronto rent and insurance laws.
- Implemented a document processing pipeline using PyPDF and LangChain to split, embed, and store text chunks in a ChromaDB vector database.
- Integrated GPT4All to enable offline LLM inference, ensuring 100% data privacy and eliminating reliance on external cloud APIs.

Echo-HFrEF Video Classifier | *Python, PyTorch, 3D CNNs, Vision Transformers* Feb 2026 – Present

- Developed a resource-efficient deep learning pipeline to classify heart failure (HFrEF) from echocardiogram videos under a strict 6 GB VRAM constraint.
- Compared R(2+1)D-18 and MVIT v2 Small architectures using transfer learning, achieving an ROC-AUC of 0.936 with the multiscale vision transformer.
- Achieved a defined clinical operating target, realizing an 82.5% sensitivity at 90% specificity.
- Optimized memory footprint and training speed by implementing strategic parameter unfreezing and Automatic Mixed Precision (AMP).