Fuad Thabet

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Education

University of Ottawa Apr 2026

Bachelor of Science in Computer Science, Specialization in Data Science

Experience

Full-Stack Web Developer Oct 2023 - Apr 2024

Mooruk Design Solutions *Ottawa, ON*

- Developed a custom CRM platform to streamline client management and internal workflows, resulting in a **40%** reduction in manual data entry and improved support response time by **25%** across the organization.
- Integrated asynchronous API handling using **JavaScript** and **React** in a modular front-end interface, allowing for real-time updates and enabling seamless communication between client and server components.
- Configured automated CI workflows using **GitHub Actions** to lint, test, and deploy code on each pull request, reducing integration issues by over **50%** and accelerating development cycles through continuous feedback

Leadership

Founding Software Developer Dec 2024 - Present

Kaizen *Ottawa, ON*

- Created and launched a responsive UI with **PrimeReact** components and custom **React** hooks for time tracking, resulting in a **40%** increase in mobile user engagement and a **30%** reduction in time entry errors.
- Engineered a robust **Firebase Authentication** system with secure token validation, enabling seamless on-boarding that reduced user registration abandonment by **35%** compared to previous authentication methods.
- Leveraged **TypeScript** and **PostgreSQL** to create a type-safe, reliable backend with complex data relationships, ensuring data integrity while delivering below **200ms** API response times even under heavy load conditions.

Projects

Linear Regression Model Library | *Python, NumPy, Pandas, Streamlit, Hugging Face* Feb 2025 - April 2025

- Developed a modular regression framework from scratch implementing Linear, Ridge, and Lasso models, achieving up to **380%** improved accuracy (**R^2 of 0.8108 vs 0.6148**) over scikit-learn on high-dimensional datasets.
- Implemented coordinate descent and gradient descent optimizers with vectorized operations in NumPy, reducing runtime by up to **300%** compared to loop-based methods, while ensuring convergence and numerical stability.
- Built and deployed an interactive **Streamlit** application on **Hugging Face Spaces** to visualize model training, evaluate performance across datasets, and compare regularization techniques in real time.
- Implemented custom optimizers (gradient descent, coordinate descent) and cross-validated lambda tuning to optimize L1/L2 penalties, demonstrating applied knowledge of model interpretability, regularization, and optimization techniques.

Housing Price Regression Model | *Python, NumPy, Pandas, Seaborn* Feb 2025 - Mar 2025

- Built and optimized multiple regression models (Linear, Lasso, ElasticNet) to predict housing prices, with simpler models outperforming complex alternatives by up to **20%** in predictive accuracy.
- Developed a robust data science pipeline including feature encoding, outlier detection with Local Outlier Factor, and K-Fold cross-validation, ensuring reproducibility and fair evaluation across multiple data partitions.
- Applied statistical analysis to interpret model results and justify regularization choices, demonstrating an understanding of bias-variance tradeoff and model generalization in real-world regression tasks.

Exploratory Data Analysis Portfolio | *Python, Jupyter, Pandas, Seaborn, NumPy* Jan 2025 - Mar 2025

- Revised data processing efficiency by reducing runtime by up to **50%** through implementing vectorized operations and NumPy broadcasting, replacing iterative loops with the MapReduce paradigm.
- Detected and removed statistical outliers using Z-score and IQR methods across numerical features such as square footage and lot area; enhanced model robustness and reduced MSE by **18%** post-cleaning.
- Diagnosed patterns of missingness using heatmaps and value counts by preserving local variance and improving regression accuracy by 12% through implemented conditional imputation based on neighborhood and house style.

Skills

Certifications: Supervised Machine Learning: Regression and Classification
Languages: Python, JavaScript, Typescript, SQL, Java, C++, Go, HTML/CSS
Frameworks: Next.js, Angular, React, Node.js, Flask, Django, Express.js, Swift
Technologies: PostgreSQL, SQLite, Git, PyTorch, TensorFlow, Pandas, Scikit-learn, Seaborn, Keras, Conda, Jupyter