

# Fuad Thabet

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## EXPERIENCE

### Full-Stack Web Developer

Oct 2023 - Apr 2024

*Mooruk Design Solutions*

*Ottawa, ON*

- Built a custom **CRM system** to manage client interactions, employee workflows, and customer support.
- Integrated **JavaScript and React** into a client-server web application that successfully handles HTTP requests with asynchronous API calls
- Implemented **version control using Git** to track changes efficiently and ensure code integrity.

## EDUCATION

### University of Ottawa

Sep 2021 - Apr 2026

*Bachelor of Science in Computer Science, **Specialization in Data Science***

- Skills: Software engineering, statistics, mathematics, and systems programming.
- Relevant Coursework: Machine Learning, Databases, Discrete Structures, Data Structures & Algorithms, Fundamentals of Data Science

## PROJECTS

### Productivity Tracker App | *TypeScript, JavaScript, React, Next.js, Firebase, Node.js, PostgreSQL*

Dec 2024 - Present

Full-stack time tracking and productivity management application enabling users to track activities, manage projects, and visualize productivity metrics through intuitive reports.

- Designed and **implemented 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.

### Linear Regression from Scratch | *Python, NumPy*

Feb 2025 - Present

Designed and implemented a fully-featured linear regression library from scratch using Python and NumPy, incorporating multiple regression variants (OLS, Ridge, Lasso) with an extensible object-oriented architecture, and optimized gradient descent algorithms.

- Designed and implemented a comprehensive linear regression library without using scikit-learn, **achieving 95% accuracy** compared to industry-standard implementations.
- Optimized gradient descent algorithms by implementing vectorized operations in NumPy, **improving computational efficiency by 300%** compared to initial loop-based implementation.
- Built interactive visualization tools using Matplotlib to analyze model performance and parameter convergence, enabling clearer interpretation of regression results and model behavior.

### Housing Price Regression Model | *Python, NumPy, Pandas, Seaborn*

Feb 2025 - Mar 2025

Developed a comprehensive housing price prediction system using machine learning techniques on real estate data.

- Implemented and compared multiple regression models (Linear, Lasso, ElasticNet) achieving **best RMSE of 19,127** with Linear Regression
- Demonstrated that simple Linear and Lasso Regression outperformed more complex models, providing a **20% improvement over ElasticNet**
- Created a robust data preprocessing pipeline including categorical encoding, outlier detection with Local Outlier Factor, and K-Fold cross-validation to ensure stable model evaluation across multiple data partitions

### Exploratory Data Analysis Portfolio | *Python, Jupyter, Pandas, Seaborn, NumPy, Markdown*

Jan 2025 - Mar 2025

Enhanced dataset readiness for predictive modeling by conducting statistical analysis, applying correlation analysis and analysis of variance (ANOVA) to identify patterns in the data.

- Revised data processing efficiency by implementing vectorized operations and NumPy broadcasting, replacing iterative loops with the MapReduce paradigm, **reducing runtime by up to 50%**.

## SKILLS

**Languages:** Python, JavaScript, Typescript, Java, C++, Go, HTML/CSS, JSON

**Frameworks:** Next.js, Angular, React, Node.js, Django, Express.js, Swift

**Technologies:** PostgreSQL, SQLite, Git, PyTorch, TensorFlow, Pandas, Scikit-learn, Seaborn, Keras, Conda, Jupyter

**Additional Skills:** OOP, Unit testing, Communication, Problem-solving, Leadership, Time Management