

# Khanh Le

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## EDUCATION

**Villanova University, Villanova, PA**

*Expected May 2027*

Bachelor of Science in Computer Engineering | GPA: 3.9/4.0 | *Dean's List*

- **Coursework:** Calculus, Differential Equations with Linear Algebra, Introduction to C, C++ Algorithms & Data Structure, Discrete Structures, Digital Logic & VHDL Basics, Digital Systems, Fundamentals of Signal Processing

## TECHNICAL SKILLS

**Languages:** JavaScript, Python, Java, C, C++, HTML, CSS, MATLAB, VHDL, SQL

**Frameworks and Libraries:** Node.js, Express.js, Matplotlib, NumPy, Pandas, Java Swing, Django, Flask

**Tools:** Database (MongoDB, SQLite), JWT, GitHub, OpenAI API, Linux, VS Code, NetBeans, Eclipse, Thunder Client, Postman API

## EXPERIENCES

**HeadStarter AI**

Remote

*Software Engineer Fellow*

*Jul 2024 – Sep 2024*

- Learned and developed 5 AI-powered projects using **Next.js**, integrating **Large Language Models (LLMs)** via **OpenRouter** and utilizing **Cloud Firestore** for real-time data storage.
- Collaborated as the backend developer in a team of 4 on PawSwipe, a Tinder-like web application for pet adoption, utilizing **Next.js** as the framework and **MongoDB** for data storage.

**FPT Software**

Danang, Vietnam

*Software Engineer Intern*

*Jun 2024 – Aug 2024*

- Developed a scalable Library Management API with **Node.js**, **Express.js**, and **MongoDB**, ensuring data integrity with MongoDB transactions.
- Secured user authentication and authorization with **JSON Web Tokens (JWT)**, implementing **role-based access control (RBAC)** and enhanced system security.
- Optimized **RESTful APIs** to handle **5,000+ items** and **500+ concurrent users**, reducing data retrieval times by **20%**.
- Designed, implemented and indexed a robust **schema** for authors, genres, items, loans, and users to efficiently manage library data and relationships.

**Villanova Center for Research and Fellowships**

Villanova, PA

*Research Assistant*

*Jan 2024 – May 2024*

- Authored a **4-page** literature review synthesizing findings from **20+ research papers** on the context of takeovers in autonomous vehicles.
- Developed **Python** scripts with **NumPy**, **Pandas**, and **Matplotlib** to visualize complex psycho-behavioral data, incorporating data resampling and interpolation for robust analysis.
- Integrated and synchronized diverse datasets (smartwatches, cameras, etc.) to enhance data integrity and analytical insights, creating interactive visualizations with **Flask** and implementing GUIs using **Tkinter**.

## PROJECTS

**PawSwipe | Next.js, MongoDB**

*Jul 2024 – Sep 2024*

[github.com/khanhhlee05/PawSwipe](https://github.com/khanhhlee05/PawSwipe)

- Collaborated with 3 teammates to develop PawSwipe, a Tinder-like pet adoption platform using **Next.js** and **MongoDB**.
- Implemented web scraping using **Selenium** and **BeautifulSoup** to automate data extraction and populate the **MongoDB** database with pet profiles from **5+** local shelters in Massachusetts and Rhodes Island.
- Developed **RESTful APIs** to communicate with **MongoDB Atlas** to be able to handle **1,000+ users** and **1,000+ pet profiles** efficiently.

**Shoe-Store Point of Sales | Java, SQL**

*Mar 2022 – Feb 2023*

[github.com/khanhhlee05/Shoe-Store-Management-Application](https://github.com/khanhhlee05/Shoe-Store-Management-Application)

- Developed a **full stack** Point of Sales (POS) application for a shoe store using **Java**, utilizing **Object-Oriented Programming** and the **MVC architecture**.
- Implemented an intuitive GUI with **Java Swing**, managed data using **SQLite**, and utilized **JDBC** for efficient database interactions.
- Integrated **JavaMail API** for automatic email notifications, enhancing communication capabilities.
- Created **comprehensive documentation** including the development timeline, database design, GUI wireframes, app flow, and detailed usage instructions.