

# VISHWA KAMALBABU

(317) 922-9427 | vishwakamalbabu17@gmail.com | linkedin.com/in/vishwakamal

## EDUCATION

### Purdue University

Bachelor of Science in Computer Science

West Lafayette, IN

Expected May 2028

- Relevant Coursework: Data Structures and Algorithms, Object-Oriented Programming, Software Development, Programming in C, Python Programming, Foundations of Computer Science

## TECHNICAL SKILLS

**Programming Languages:** Python, Java, C, R, JavaScript, HTML, CSS, SQL

**Frameworks & Libraries:** React, Node.js, NumPy, Pandas, Scikit-learn, Matplotlib, TensorFlow, PyTorch, Hugging Face Transformers

**Machine Learning & AI:** Machine Learning, Deep Learning, Data Analysis, Predictive Modeling, Natural Language Processing, Neural Networks, Large Language Models, Regression Analysis, Feature Engineering

**Bioinformatics & Data Tools:** BWA, SAMtools, BCFtools, BEDtools, Clustal Omega, Genomic Data Analysis, Sequence Alignment

**Developer Tools:** Git, GitHub, Linux, Unix, Command Line, Version Control, Agile Development, CI/CD, Docker

**Cloud & Databases:** Google Cloud Platform, AWS, MySQL, Database Design, API Integration, RESTful APIs

## EXPERIENCE

### The Data Mine, Purdue University

Undergraduate Researcher, Elanco Corporate Partnership

West Lafayette, IN

August 2025 – May 2026

- Developed end-to-end bioinformatics pipeline using Python and R to analyze antibody Fv regions and V germline genes for pharmaceutical research, processing genomic datasets to identify CDR loop patterns driving antigen binding
- Implemented data processing workflow using BWA alignment, SAMtools, BCFtools, and BEDtools for variant calling and genomic data analysis; extracted FASTA sequences and performed sequence alignment using Clustal Omega
- Collaborated with cross-functional team of data scientists and pharmaceutical researchers; presented technical findings through data visualizations and documentation to stakeholders

### Jersey Mike's

Student Lead

West Lafayette, IN

May 2025 – Present

- Demonstrated leadership and team collaboration while managing operations in fast-paced environment
- Developed problem-solving and communication skills through customer service and team coordination

### Self-Employed

Robotics Instructor

Remote

October 2021 – February 2022

- Taught programming concepts including Arduino C++, circuit design, and embedded systems to students through virtual instruction
- Designed technical curriculum and lesson plans adapted to diverse learning styles, improving student technical proficiency
- Mentored students on hands-on engineering projects including sensor integration, microcontroller programming, and autonomous systems

### Carmel Clay Public Library

Community Volunteer

Carmel, IN

August 2018 – May 2024

- Supported library operations and community programs, demonstrating consistent volunteer commitment over 6 years
- Assisted with program coordination and patron services, developing interpersonal and organizational skills

## PROJECTS

### AI Resume Analyzer with LLM Integration

- Built AI-powered resume analysis tool using Python and Hugging Face Transformers to evaluate resume content, extract key information, and provide optimization recommendations using natural language processing
- Transitioned from cloud-based Hugging Face API to locally-deployed Ollama framework for improved performance and cost efficiency; implemented prompt engineering and model fine-tuning for resume-specific analysis tasks

### Housing Price Prediction Machine Learning Model

- Built supervised machine learning model using Python, Scikit-learn, and regression algorithms to predict housing market trends based on historical pricing data and economic indicators

- Applied data science techniques including data preprocessing, feature engineering, model training and validation, hyperparameter tuning; created data visualizations using Matplotlib and Pandas for exploratory data analysis

## **CERTIFICATIONS & ACTIVITIES**

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**Certifications:** Google Cloud Skills Boost - Introduction to Generative AI Learning Path (July 2024)

**Activities:** Purdue Corporate Partners Program, Technology Mentorship, Environmental Advocacy