

# Christopher Vishnu Kumar

## Computer Systems Engineering (Honours) Graduate

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Engineers Australia, Graduate Member

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## Professional Summary

I am a recent graduate with a Bachelor of Engineering (Honours) in Computer Systems from the University of Southern Queensland. My academic background and hands-on experience in machine learning, data analysis, and software development have prepared me to contribute effectively in engineering roles. I have strong knowledge of Large Language Models (LLMs), prompt engineering, and Retrieval-Augmented Generation (RAG), with a focus on applying these technologies to improve efficiency and develop practical AI solutions. I am looking for a role where I can apply my technical skills, collaborate with a team, and continue learning in a dynamic environment.

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## Technical Skills

- **Programming Languages:** Python, MATLAB, C, C++, C#
- **Web Development:** HTML, CSS, JavaScript
- **AI & Machine Learning:** OpenAI, Claude, Gemini, HuggingFace, Ollama, Natural Language Processing (NLP)
- **Computer Vision & ML Frameworks:** TensorFlow, PyTorch, Scikit-Learn, OpenCV
- **Data Analysis & Visualisation:** Pandas, NumPy, Matplotlib, Seaborn
- **Software Engineering:** Object-Oriented Programming (OOP), Git, User Testing
- **Scripting & Automation:** Bash, Power-Shell, Shell Scripting
- **Databases:** SQL, SQLite
- **Cloud & DevOps:** Docker, AWS (basic usage)
- **Embedded Systems:** Microcontroller Programming (Arduino, STM32), Firmware Development
- **Computer Hardware:** Assembly Language, Hardware Troubleshooting, System Maintenance
- **Operating Systems & Tools:** Linux, Windows, macOS, API Integration, Visual Studio Code

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## Education

- **Bachelor of Engineering (Honours), Computer Systems**  
*University of Southern Queensland, Toowoomba*
- **Foundation Science Programme**  
*The University of the South Pacific, Suva, Fiji*
- **Year 12 Certificate**  
*Mahatma Gandhi Memorial High School, Suva, Fiji*

## Professional Experience

### Software Engineering Intern

#### Aubot

*March 2025 – Current*

- Stress-tested coding exercises to evaluate the robustness of the learning platform.
- Diagnosed and reported bugs, content gaps, and usability issues to improve overall platform quality and user experience.

### AI/LLM Engineering Intern

#### University of Southern Queensland

*March 2024 – June 2024*

- Improved grading efficiency and accuracy by leveraging Large Language Models (LLMs) and prompt engineering for Python scripts and short-answer assessments.
- Optimised Retrieval-Augmented Generation (RAG) workflows to enhance performance in practical AI applications.

### Data Annotator

#### Centre for Agricultural Engineering, University of Southern Queensland

*October 2021 – March 2022*

- Annotated image data to support machine vision models for weed identification.
- Enhanced labelling software by improving the GUI and implementing additional annotation tools.
- Maintained high annotation quality through effective team collaboration and review processes.

### Barista / Cafe Worker

#### Bounce Hub Cafe

*October 2018 – March 2022*

- Provided friendly and efficient customer service while managing point-of-sale (POS) transactions.
  - Assisted with food preparation and inventory replenishment to support smooth daily operations.
  - Maintained high standards of speed and quality during peak service periods.
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## Volunteering

### Volunteer/Youth Leader

#### Vinnies SENSE

*April 2019 – October 2020*

- Led monthly hangouts for children who had transitioned from the Vinnies Buddies program.
- Created a fun, supportive space where kids felt comfortable opening up and building trust.
- Acted as a point of contact for any concerns, escalating issues to supervisors as needed for follow-up.

## Key Projects

### Internship/Work Experience

*March 2024 – June 2024*

- **Project:** The Grading Capabilities of Large Language Models: A Comparative Study of OpenAI and Ollama Across Python and Short Answer Assessments and Rubrics.
- **Overview:** Explored the use of LLMs (OpenAI, Ollama, HuggingFace) for grading Python scripts and short-answer questions. Developed an automated scoring pipeline through prompt engineering and built a framework for testing LLM accuracy using diverse rubrics.
- Developed methods to improve LLM grading.

### Internship/Work Experience

*March 2024 – June 2024*

- **Project:** Retrieval-Augmented Generation (RAG) Evaluation.
- **Overview:** Tested multiple locally deployed and API-based RAG workflows, analyzing their retrieval and generation accuracy. Conducted manual assessments to measure response quality across various RAG pipelines, including those integrated via APIs. Explored methods for improving RAG performance, such as optimizing retrieval strategies and refining prompt engineering techniques.

### Undergraduate (Honours) Research Project

*January 2023 – December 2023*

- **Project:** Effect of Camera Model and Camera Settings on Image Classification.
  - **Overview:** Investigated how different camera models and settings influence image classification accuracy using machine vision techniques. Designed a replicable image capture and classification procedure and evaluated the impact of camera variations on performance. Insights contributed to optimising camera settings for future research and applications.
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## Additional Projects

- **Contextual AI Chatbot with Vector Database (Python | Ollama | Vector Database)**  
Developed an AI-powered chatbot using vector embeddings and a retrieval-augmented model to store and retrieve contextual conversation history. Implemented memory-efficient summarisation and persistent time-stamped logging to ensure continuous, relevant interactions across multiple sessions.
- **AUSLAN Letter Recognition (Python | TensorFlow)**  
Developing a project using OpenCV and TensorFlow to identify and classify AUSLAN letters through real-time image recognition and machine learning techniques.
- **Interactive Terminal Website (HTML | JavaScript | CSS)**  
A web-based interactive resume designed to look and function like a command-line terminal.
- **Camping/Hiking Lodge Design (Excel)**  
Evaluated potential sites along a hiking trail for a self-sufficient camper's lodge, analysing soil composition, construction accessibility, and infrastructure for power and water.
- **Greenhouse Design (Excel | AutoCAD)**  
Designed an efficient greenhouse layout by optimising grow table dimensions, water tank capacity, plant height limits, and walkway clearances for effective space and resource utilisation.