

Donovan Koh

Full Name: Koh Yi Heng, Donovan

Email: kohdonovan71@gmail.com

Mobile No: 96542556

Current Role: Full Time Student (Diploma in Applied AI & Analytics) in Singapore Polytechnic

Language Proficiency: English, Chinese (Written & Oral)



Personal Statement

Possessing extensive knowledge in the field of Analytics, and strong foundation in both theory and practical application. I aim to venture into the IT industry specializing in data analytics. I have cultivated a diverse skill set that spans multiple domains within the field of computing. Through my academic journey and hands-on projects, I have developed proficiency in data analysis, machine learning, and the implementation of AI solutions. My goal is to leverage these skills to contribute to innovative and impactful projects in the IT industry, driving data-driven decision-making and fostering technological advancements.

Education

Diploma in Applied AI and Analytics Singapore
Polytechnic – Graduation 2026

2022 - Current

GCE “N” Levels
Fuhua Secondary School

2018- 2021

School Projects

JavaScript

- **Pokémon Dictionary**
 - Created a **Node.js-based RESTful API** to retrieve data on Pokémon types, including power, health, energy, and type.
 - Implemented **CRUD operations** using an **Express.js** server and integrated **MongoDB** for efficient data storage.
 - **Soft skills gained:**
 - **Analytical Thinking:** Effectively navigated challenges in API routing and data integration, ensuring smooth functionality.
 - **Precision:** Ensured data consistency and accuracy across multiple API endpoints.
 - **Flexibility:** Quickly adapted to new libraries and backend development techniques, applying them effectively to enhance the project.

Python

- “Project HomeBud”
 - Developed an **IoT smart home** project using a **Raspberry Pi** that integrates with **Telegram** to provide information to homeowners.
 - It can monitor home temperature and humidity using the **sensor DHT22**, take pictures and videos when motion is detected using both **Raspberry Pi Camera Module v2** and **PIR motion sensor** respectively, and transfer the data to **ThingSpeak**. The data is then displayed in graph format on the Telegram app upon user request.
 - **Soft skills gained:**
 - **Problem-Solving:** Setting up and troubleshooting different sensors and ensuring seamless integration with Telegram and ThingSpeak required tackling technical challenges, testing, and refining your approach.
 - **Attention to Detail:** Worked with sensors, data transfer protocols, and app integration that requires careful calibration, ensuring that data is accurate and making sure that the system functions reliably.

Low code applications such as Mendix and Node-RED

- “Smart Booking & Student Learning Assistance Application”
 - Developed a low code application in **Mendix** which is an **all-in-one app** for assignment tracking, room booking, and communication, with intelligent suggestions from **ChatGPT** based on the user’s schedule.
 - **Soft skills gained:**
 - **Creativity and Innovation:** Designing an all-in-one application with varied features and leveraging AI for personalized suggestions demonstrates innovative thinking and creativity in problem-solving for user needs.
 - **User-Centric Design:** By incorporating the aspects of SPICE (Social, Physical, Identity, Communication and Emotion) we have come up with the following features that would benefit the end user like assignment tracking, room booking, and communication, you likely considered users’ workflows and convenience, ensuring the app offers an intuitive experience for multiple purposes.

Machine Learning

- **Loan Default Prediction**
 - Utilized **scikit-learn** to build a predictive model for loan defaults, involving feature selection, model training with **logistic regression**, and performance evaluation.
 - **Soft skills gained:**
 - **Data-Informed Decision-Making:** Selected key features and assessed model performance through thorough data analysis.

- **Perseverance:** Continuously improved the model by iterating and refining approaches.
- **Analytical Reasoning:** Evaluated outcomes to enhance model accuracy and overall effectiveness.

Deep Learning

- **Vegetable Dataset**
 - Designed and trained a **Convolutional Neural Network (CNN)** using **TensorFlow** and **Keras** to classify vegetable images, leveraging **data augmentation** for improved accuracy.
 - **Soft skills gained:**
 - **Analytical Insight:** Employed deep learning methods to achieve high precision in image classification tasks.
 - **Versatility:** Developed proficiency in neural network architectures and transfer learning techniques.
 - **Meticulousness:** Carefully adjusted model parameters to optimize training results.

Data Management and Visualization

- **Sales Dashboard**
 - Developed an interactive **Tableau** dashboard to analyze sales performance, incorporating multiple data sources to track trends and KPIs.
 - **Soft skills gained:**
 - **Teamwork:** Collaborated with cross-functional teams to gather data and define key performance indicators.
 - **Effective Communication:** Created clear, actionable visualizations tailored for stakeholder engagement.
 - **Data Storytelling:** Used visual elements to present insights compellingly, enabling data-informed decision-making.

Databases

- **E-commerce Database Design**
 - Engineered a **MongoDB** NoSQL schema for an e-commerce platform to optimize data storage for products and user profiles, with a focus on scalability.
 - **Soft skills gained:**
 - **Strategic Planning:** Designed the database architecture with scalability in mind to support future platform expansion.
 - **Collaboration:** Coordinated with team members to ensure the database design aligned with overall project objectives.
 - **Clear Communication:** Simplified complex database concepts for effective understanding among non-technical team members.

Web Frameworks

- **Protect the Earth**
 - Built a **Flask-based** web service for a gamified sustainability platform, including sign-up, quiz features, and a points system.
 - **Soft skills gained:**
 - **Innovative Thinking:** Created an interactive user experience designed to encourage sustainability awareness.

- **Solution-Oriented Approach:** Developed smooth functional flows and optimized interactions for a user-friendly experience.
- **User-Centric Perspective:** Focused on user motivations to amplify the educational impact of the platform.

Front-end Technologies

- **Save the Earth**
 - Developed a React application focused on global warming awareness, aimed at educating students on sustainable living.
 - **Soft skills gained:**
 - **Clear Communication:** Effectively conveyed sustainability topics through a user-friendly interface.
 - **User Empathy:** Designed with accessibility and intuitive navigation to enhance the user experience.
 - **Creative Engagement:** Integrated interactive elements to capture user interest and encourage learning about sustainability.

Professional Experience

Staffie (Flexible Part-time Staff)
(Since Aug 2023)

- Leveraged Staffie app for flexible earning opportunities with no commitment.
- Ensured smooth daily operations and assisted with food preparation.
- Provided dining, takeaway, and delivery services.
- Maintained high standards of quality control, hygiene, sanitation, and food safety compliance.
- Performed additional tasks as assigned by the Restaurant Manager.
- Built strong rapport with colleagues, enhancing a positive work environment.

Technical Skills

- **JavaScript:** Proficient in server-side scripting with **Node.js** for managing API endpoints.
- **SQL:** Skilled in database queries and data manipulation for relational databases.
- **Machine Learning:** Experienced in supervised and unsupervised learning, including classification, regression, clustering, and dimensionality reduction.
- **Machine Learning Libraries:** Proficient in using **scikit-learn** for model development, training, and validation.
- **Deep Learning Frameworks:** Knowledgeable in **TensorFlow** and **Keras** for building and training neural network models.
- **Neural Network Architectures:** Familiar with **CNNs** for image recognition, **RNNs**, and **LSTMs** for sequential data analysis.
- **Transfer Learning:** Skilled in using pre-trained models for new tasks with fine-tuning.
- **Data Management and Visualization:**
 - **Tableau:** Advanced skills in data visualization and building business intelligence dashboards.

- **Excel:** Competent in spreadsheet manipulation, data analysis, and visualization functions.
- **Databases:**
 - **MongoDB:** Proficient in NoSQL database management, schema design, and developing efficient data aggregation pipelines.
 - **SQL:** Experienced with complex query writing and optimization for data extraction and reporting.
- **Web Frameworks:** Experienced in building scalable RESTful web services with **Flask** and integrating with frontend technologies.
- **Version Control:** Proficient in source code management with **Git/GitHub**.
- **Front-end Technologies:**
 - **HTML/CSS:** Fundamental understanding of web content structuring and styling.
 - **React:** Basic knowledge of building user interfaces.

Other Tools:

- **Jupyter Notebooks:** Extensive experience with interactive development and data analysis.
- **Docker:** Familiar with containerization and deployment practices.

Awards and Achievements

- Ministry of Education's Edusave Good Progress Award (2021)

Co-Curricular Activities

ELDDS (English Language Drama and Debate Society)

- **Actively participated in the Singapore Youth Festival (SYF) 2019**, contributing to the Drama segment.
- **Leadership and Mentorship:** Served as a role model and provided guidance to younger cast members, helping them understand their roles, develop their skills, and build confidence for the performance.
- **Collaboration with the Director:** Worked closely with the Director, taking on responsibilities to enhance specific scenes and bring the overall vision of the performance to life.
- **Commitment to Excellence:** Took initiative in refining performance aspects, ensuring high standards were maintained for the festival showcase, contributing to a polished and impactful final production