An Enriching Journey into AI:
Empowering Education and Fostering Innovation

AI Singapore (Track 2), Teacher Work Attachment
22 May – 09 Jun 2023

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Article was written with the use of prompt engineering (i.e., using carefully crafted prompts) in ChatGPT.

Introduction:

My three-week work attachment at AI Singapore (Track 2) provided an immersive learning experience that deepened my understanding of artificial intelligence (AI) and equipped me with invaluable knowledge and resources. This reflection summarises the highlights of my journey and explores how it will positively impact my role as a high-school computing teacher. From enhancing literacy in AI to unveiling the machine learning workflow, exploring technological tools, delving into computer vision, tapping into AI data sources, and harnessing AI resources, this journey has expanded my horizons and inspired me to create an AI Learning Programme (AILP) for schools that would benefit both educators and students.

Enhancing Literacy in AI:

The attachment fostered a deeper understanding of AI concepts, machine learning (ML), deep learning (DL), computer vision, and natural language processing. Equipped with this knowledge, I can effectively communicate complex concepts to my

students and encourage them to explore the potential impact of AI on industries and

our society. By guiding them to be critical thinkers and responsible users of AI technology, I can nurture their curiosity and encourage them to contribute to the field.

Unveiling the ML Workflow:
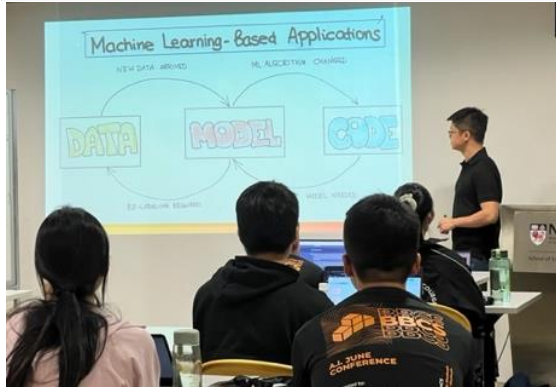
Understanding the ML workflow is crucial in empowering students to create their own AI models and critically analyse existing ones. My exposure to the workflow process covered areas like data pre-processing, model training, evaluation, and deployment. I acquired practical skills that will enable me to guide students through each stage of the process. Teaching them data ethics and bias mitigation will further develop their understanding of responsible AI development and usage.

Exploring Technological Tools:

Exposure to innovative technological tools such as ChatGPT, PowerPoint Record, Canvas, Teachable Machine, and Sparkit.ai opened for me new avenues for engaging educators in teaching and learning-related activities. By incorporating these tools into my teaching repertoire, I can create stimulating lessons that cater to diverse learning preferences and which encourage active participation. These user-friendly interfaces and interactive features will facilitate a more inclusive learning environment.


Peeking into the World of Computer Vision:

Hands-on experience with the 'peekingduck' computer vision framework provided me with practical insights into object detection and image classification. By designing projects that encourage students to explore the potential of computer vision, I can foster in them 21CC skills like inventive thinking and problem-solving skills. This experience has broadened my horizons, enabling me to envision AI as a powerful tool across various industries.

Tapping into AI Data Sources:

Platforms like Kaggle.com offer vast datasets for training AI models. Equipped with digital literacy involving these
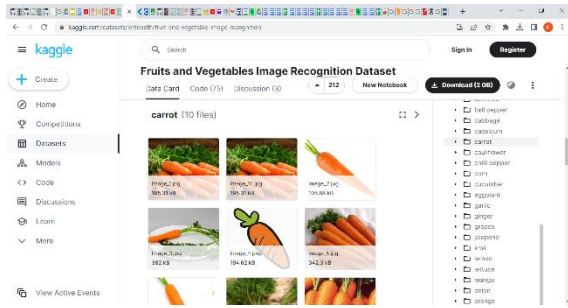
resources, I can guide students in utilising relevant datasets to build their own AI projects. Real-world data will provide them with hands-on experience and deepen their understanding of AI applications.

Harnessing AI Resources:

Discovering resources like the ChatGPT Playbook, the AI Playbook for the Public Sector, and a library of books relating to ML and DL will enable me to facilitate self-directed learning among my students. These resources offer guidance on prompt engineering, chatbot design, natural language processing, and large language models. Tapping these resources in my teaching practices will enhance the learning experience and empower students to explore AI beyond the classroom.
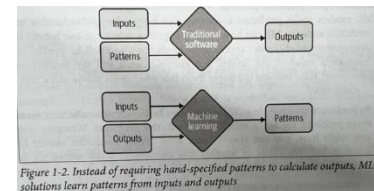

Figure 1-2. Instead of requiring hand-specified patterns to calculate outputs, ML solutions learn patterns from inputs and outputs

Networking and Collaborating:

Collaborating with AI engineers and fellow educators enriched my learning experience. Engaging in discussions, exchanging ideas, and working on AI projects allowed me to gain insights from industry experts and learn from my peers. This collaborative environment fostered a sense of community and provided a platform for continuous learning and growth.

Creating an AI Learning Programme (AILP) for Schools:
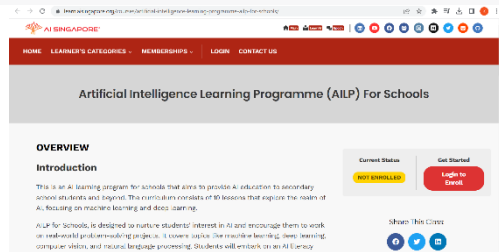
The AILP, created as a culminating project, will serve as a comprehensive resource for educators and students on the LearnAI portal. It offers step-by-step guidance, practical exercises, and real-world examples, making AI education more accessible and engaging. This contribution to the AI education landscape fills me with pride, as I empower future generations to become proficient in this rapidly advancing field.

Conclusion:

My attachment to AI Singapore has transformed my understanding of AI and equipped me with valuable knowledge, skills, and resources. As I return to my role as a computing teacher, I am eager to make use of my new-found insights and inspire my students to embrace the opportunities and challenges presented by AI. Through the AILP and the sharing of industry insights and deep learning training pipelines, I aim to foster 21CC skills like inventive and critical thinking, and deepen their ethics involving the leveraging of AI. This enriching journey has enhanced my professional development and instilled in me a commitment to empower students to become active contributors in the AI landscape.