SON NGO

+61 450420890 | theson2004@outlook.com | https://www.linkedin.com/in/son-ngo-2272b3215/ | https://github.com/Ngoson2004 | https://ngoson2004.github.io/

I'm interested in developing machine learning and deep learning methods for computer vision and robotics. My focus is on transfer learning, multimodal perception, and data-efficient training, with an emphasis on robustness, uncertainty estimation, and real-world deployment.

EDUCATION

Swinburne University of Technology - Bachelor of Computer Science - Artificial Intelligence (Professional degree) Aug 2022 - May 2025

- GPA: 3.55

AWARDS & CERTIFICATIONS

- **Golden Key International Honour Society Member – Top 15%**: Recognised as the top 15% of high-performing students in all academic disciplines, validated by Swinburne University of Technology.
- **Deep Learning Specialisation**: For completion of 5 courses on the mechanism of deep learning. Another course of DeepLearning.ai.
- **Machine Learning Specialisation:** For completion of 3 courses on the fundamentals of machine learning provided by DeepLearning.ai and Stanford University.
- **General Certificate of Education Advanced Subsidiary Level and Advanced Level - Cambridge Assessment International Education:** 3 A* for A-level Mathematics, Physics and Chemistry
- **Certification of Excellence for Best Impact of Research Global LAB Vietnam - The Asia Foundation**

RESEARCH AND WORK EXPERIENCE

CSIRO Clayton – Machine Learning Researcher Trainee (Honours-equivalent research) Feb 2025 - Present

- Conducted research in AI for drug discovery and assessed its real-life applicability. Apply AI to predictive analysis of molecules, which accelerates drug screening and reduces its cost.
- Combine data from multiple sources and train Graph Neural Network on multiple chemical properties. Experimented with various forms of molecular representations. Acquired skills in high-performance computing and SLURM.
- Successfully implemented multi-task learning method on Chemprop's GNN. Model achieved top 3 on open-sourced leaderboard, with a mean absolute error of only 0.27.
- Cooperated with other experts in AI engineering, computational chemistry and other domains to resolve bottlenecks, discuss solutions to improve model's performance and plan for research paper publication.

FPT Software – Remote AI Engineer Internship July 2024 – Jan 2025

- Explored the application of multimodal models in manufacturing, leveraging their ability to simultaneously process computer vision and human language to enhance operational efficiency.
- Fine-tuned the BLIP multimodal model for meter reading in a factory setting. Utilised a dataset containing labelled images and question-answer pairs to improve accuracy and automation.

Aetosky – Machine Learning Summer Internship Nov 2023 – March 2024

- Improved the accuracy of object detection models (for buildings, roads, trees, and recreational pools) by 15% through optimising the ROI ratio to 0.5 and RPN threshold to 0.9, aiding infrastructure planning efforts.
- Labelled and processed satellite images using QGIS, applying vector polygons to create ground-truth labels, and configured the Mask-RCNN model to generate object masks with enhanced segmentation accuracy.
- Collaborated with supervisors and the project manager to report and analyse deep learning model performance, leading to informed decision-making in model testing and analysis.

TALKS AND POSTERS

CSIRO Advanced Engineering Biology Future Science Platform Workshop

- Attended a workshop organised by CSIRO with a research theme of Advanced Engineering Biology. The event centred on the latest advancements in biotechnology and the role of AI and data science in driving healthcare innovation.
- Designed a poster presenting the efficiency of automated AI/ML tools in drug discovery. Poster was displayed at the event and received positive feedback.

COMPLETED PROJECTS

Computer Vision for Smart City:

- Built an object detection application on the YOLO computer vision model. By uploading an image or video of a street, the model can detect rubbish appearing there and classify it. Useful for smart city initiatives.
- The YOLO model was trained on 800 images with bounding box labels. Images are manually labelled using labelme library and preprocessed for compatibility. The model obtained an Intersection over Union of around 95-97%.

Fine-tuned Distilled Bert:

- Built a fine-tuned version of Distilled-Bert that can answer questions related to COVID-19 more accurately than the original version by 17% and the confidence level increased by 12%.
- This model is fine-tuned using the CovidQA, an open-source dataset on Huggingface. The fine-tuned model is also stored on my Huggingface repository.

Logistic Regression Neural Networks:

- Working in a team that is designing a Deep Learning course for Vietnamese students by writing explanation notebooks. Notebook collection consists of lectures on Logistic Regression Algorithms and Neural Networks.
- The Neural Networks were built solely with NumPy. Data is pre-processed using filters, SMOTE, and encoders from Pandas and Scikit-learn. Implemented binary classification, resulting in an 85% accuracy.

SKILLS

- **Programming Languages**: Python, Linux, C++, C#, JavaScript, SQL
- **Specialised areas**: Computer Vision, Multimodal Models, Multi-task Learning, Machine Learning Algorithms, Data Pre-processing
- **Frameworks and Libraries**: Conda, PyTorch, NumPy, Pandas, Matplotlib, SLURM, HPC, OpenCV
- **Soft skills**: Interpersonal Communication, Academic Writing, Logical Thinking, Creativity, Problem Solving, Team Collaboration, Adaptability, Attention to Detail

REFERENCE

1. **Dr Thomas Coudrat**
   - Position: Research Scientist
   - Company/Organisation: CSIRO
   - Relationship: Project supervisor
   - Contact Information:
     - Email: Thomas.Coudrat@csiro.au
     - Phone: +61 3 9545 2034
     - LinkedIn: linkedin.com/in/thomas-coudrat/
2. **Dr Nicholas Rosa**
   - Position: Post-doctorate fellow
   - Company/Organisation: CSIRO
   - Relationship: Project co-supervisor
   - Contact Information:
     - Email: Nick.Rosa@csiro.au
     - Phone: +61 423 747 947
3. **Dr Albert Ardevol Grau**
   - Position: Team Leader
   - Company/Organisation: CSIRO
   - Relationship: Line Manager
   - Contact Information:
     - Email: Albert.Ardevolgrau@csiro.au
     - Phone: +61 3 9662 7105
     - LinkedIn: linkedin.com/in/albert-ardevol-31254033/
4. **Mr Tuan Anh Pham**
   - Position: Project manager
   - Company/Organisation: Aetosky
   - Relationship: Former Manager
   - Contact Information:
     - Email: anh.pham@aetosky.com
     - Phone: +84 847 647 287
     - LinkedIn: linkedin.com/in/ptabk/