Hung Tran

Linkedin - Google Scholar - Github - Website - Email

PROFESSIONAL PROFILE

- Ph.D. student in Machine Learning, Computer Vision. Est. graduation: Jan 2024.
- First author of papers at ICCV 2023, CVPRW 2022, WACV 2021.
- Solid background in Machine Learning (esp. Deep Learning, LLM), Computer Vision.
- Industrial experiences in distributed web-based systems. Proficiency in Python and deep learning frameworks.
- Research interest: Human behavior understanding, Video understanding, Knowledge Representation with LLMs.

EDUCATION

Ph.D. in Computer Science   **Jan 2020 –**
Applied Artificial Intelligence Institute (A2I2), Deakin University, Australia   **Present**
  Thesis: Analyzing Structures of Human Behavior in Videos
  Advisors: Dr. Vuong Le, A/Prof. Truyen Tran, Prof Svetha Venkatesh

Bachelor in Information Technology   **May 2014 –**
University of Science and Technology – The University of Danang, Vietnam   **May 2019**
  Thesis: Light-weight Deep Learning model for Human Segmentation
  GPA: 8.44 / 10 - Top 10%

RESEARCH PROJECTS

Human Behavior Understanding in Video   **Jan 2020 –**
Applied Artificial Intelligence Institute (A2I2), Deakin University, Australia   **present**
- Explore the structures of human behavior observed in videos: goal-based, context-switching, commonsense.
- Model them with advanced deep learning models: RNNs, Transformers (ViT, MviT), Multi-modal networks (CLIP, BLIP, Open Flamingo) and LLMs.
- Outcome: Got 3 accepted papers at WACV 2021, CVPRW 2022, ICCV 203, and 1 on-going project.

Self-driving vehicle   **June 2017 –**
University of Science and Technology – The University of Danang, Vietnam   **March 2018**
- Program on a Jetson TK1 to navigate a 1/10 scale autonomous car while tracking lane lines, detecting and following traffic signs.
- Optimize the algorithm to ensure real-time image-processing performance.
- Outcome: Advanced to top 8 in a national self-driving car competition.

INDUSTRIAL EXPERIENCE

Research Assistant   **May 2019 –**
VNUK – The University of Danang, Vietnam   **Aug 2019**
- Conducted research and devised a cost-effective plan for building a mini self-driving vehicle.
- Programmed the self-driving capabilities on NVidia Jetson TX2 using PyTorch and OpenCV.
- *Outcome*: A fully-functioned 1/10 scale self-driving car built with a significantly reduced cost (less than 2,000$ compared the original estimate of 4,200$).

Software developer intern (Full-stack)   **Sep 2018 –**
Sioux High Tech Software Ltd.   **Jan 2019**
- Developed a remote learning system with Node.js, MongoDB, and React.js.
- Deployed the system on Amazon EC2 instances in Singapore, China, and NA.
- Utilized Amazon S3 for storing data, Docker for containerization, and Nginx for DNS mapping.
- *Outcome* A distributed system for real-time online teaching with unit-testing and back-up functionalities.

SKILLS

Programming Languages: Python - Over 5 years of experience, Other: C/C++, JS, Node.js, MongoDB.
Libraries: PyTorch, HuggingFace, NetworkX, NumPy, Pandas, OpenCV, Matplotlib.
Embedded Computing Boards: NVidia Jetson TK1, NVidia Jetson TX2, TurtleBot.
Other: AWS, Google Cloud, Git, Docker, Slurm, Distributed Computing (NCCL, Ray Framework).

PERSONAL PROJECTS

Web-Crawling University of Danang Staff Data. 2017
- Implemented a Web-Crawler to gather research outputs from the staff at The University of Danang.
- Processed and organized the acquired data into a dedicated SQL database system.
- _Outcome_: an automated tool for collecting research records and creating reports.

PUBLICATIONS

- **Tran, Hung**, Vuong Le, Svetha Venkatesh, Truyen Tran._"Persistent-Transient Duality: A Multi-Mechanism Approach for Modeling Human-Object Interaction."_ Proceedings of The International Conference on Computer Vision (**ICCV**), 2023.
- **Tran, Hung**, Vuong Le, Svetha Venkatesh, Truyen Tran. "_Persistent-Transient Duality in Human Behavior Modeling_." Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop (**CVPRW**) 2022.
- **Tran, Hung**, Vuong Le, and Truyen Tran. "_Goal-driven Long-Term Trajectory Prediction_." Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**), 2021.
- **Tran, Hung**, LE Thi My Hanh, and Nguyen Thanh Binh. "_Combining feature selection, feature learning and ensemble learning for software fault prediction_." 2019 11th International Conference on Knowledge and Systems Engineering (**KSE**). IEEE, 2019.

SCHOLARSHIPS AND AWARDS

Deakin University Postgraduate Research Scholarship.	**2020 – Present**
People's choice Award, Three Minute Thesis Competition, A2I2.	**2023**
Top 8 nationwide, Digital Race Driverless: Self-driving car competition, FPT Group, Vietnam.	**2018**

REFERENCES

- **Dr. Vuong Le,** Amazon Machine Learning Australia - levuong@amazon.com
- **A/Prof. Truyen Tran,** Applied Artificial Intelligence Institute - truyen.tran@deakin.edu.au
- **Prof Svetha Venkatesh,** Applied Artificial Intelligence Institute - svetha.venkatesh@deakin.edu.au