

E-Ro Nguyen

Ho Chi Minh City, Vietnam

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Summary

Passionate Computer Science graduate with a focus on Computer Vision, Machine Learning, and Algorithms. I bring 3 years of experience in developing algorithms for image and video understanding, as well as 6 years of competitive programming. Seeking a challenging role in the field of computer vision and machine learning where I can utilize my skills and knowledge to contribute to cutting-edge projects and advance my career.

Education

University of Science, VNU-HCM

Ho Chi Minh City, Vietnam

B.S. IN COMPUTER SCIENCE | *Advanced Program in Computer Science*

Aug. 2018 - Dec. 2022

- GPA: 3.94 / 4.00
- Graduated within the top 5/120 of my cohort
- Received full-year scholarship for freshman of the Advanced Program in Computer Science (2018)
- Received half-year scholarship for excellent student of the Advanced Program in Computer Science (2020, 2021)
- Relevant courses: Artificial Intelligence, Computer Vision, Linear Algebra, Algorithm and Complexity, Number Theory

Skills

- **Language:** Vietnamese (Native), English (Professional)
- **Programming:** Python, C/C++
- **Developer Tools:** Git/Github, Docker, Jupyter Notebook
- **Frameworks/Libraries:** PyTorch, Keras, OpenCV, NumPy, SciPy, Matplotlib, Pandas
- **Soft skills:** Problem Solving, Communication, Teamwork, Critical Thinking

Work Experience

Software Engineering Laboratory, University of Science, VNU-HCM

Ho Chi Minh City, Vietnam

RESEARCH ASSISTANT

Sep. 2019 - Sep. 2022

- Proposed, discussed and implemented methods in several projects in computer vision and artificial intelligence (Intelligence Traffic System, Video Object Segmentation, Referring Expression Segmentation, Medical Image Diagnosis and Visual Life-logging).
- Collected, and presented papers, findings for weekly seminars.
- Advisor: Assoc. Prof. Minh-Triet Tran

VinAI Research

Ho Chi Minh City, Vietnam

RESEARCH INTERN

May. 2021 - Feb. 2022

- Researched on the Computer Vision task of Semi-supervised Video Object Segmentation.
- Analysed and reproduced state-of-the-art methods on this topic.
- Proposed and implemented an upgraded model from previous SOTA approaches to speed up 25% when inference.
- Advisors: Assoc. Prof. Minh-Hoai Nguyen & Assoc. Prof. Minh-Triet Tran

Projects

Smart Interactive Retrieval of Visual Data via Semantic Understanding

Ho Chi Minh City, Vietnam

THESIS PROJECT

Feb. 2022 - Aug. 2022

- Developed an interactive retrieval system with multiple effective filter algorithms to search and retrieve relevant images fast and accurately.
- Deployed a referring expression segmentation module to enhance the explainability of the retrieval system.
- Integrated and took advantages from OpenAI's CLIP to align text prompts and images.
- Converted, stored and indexed millions of images as vector embeddings using Milvus.
- Achievement: Got 10/10 in thesis defense, First Prize in Student Scientific Research Award(EURÉKA).
- Technologies: PyTorch, OpenCV, Django, ReactJS, Milvus, Elasticsearch

Referring Expression Segmentation

Ho Chi Minh City, Vietnam

PERSONAL PROJECT

April. 2022 - Jul. 2022

- Led a team of two to build an approach for the problem Referring Image Segmentation and Referring Video Object Segmentation.
- Designed and implemented a new transformer-based method to gather multimodal information efficiently.
- Achievement: State-of-the-art on Referring Image Segmentation datasets, ranked 6th on YouTube-VOS 2021.
- Technologies: PyTorch, OpenCV, Flask

Vietnamese Scene Text Recognition

Ho Chi Minh City, Vietnam

PERSONAL PROJECT

Oct. 2021 - Dec. 2021

- Led a team of four to build a solution for the detection and recognition of Vietnamese words in Scene Text images.
- Proposed a heuristic algorithm to fix and eliminate wrong words, which boosts 3% in performance.
- Achievement: First Prize in the Ho Chi Minh city AI Challenge 2021.
- Frameworks/Technologies: PyTorch, OpenCV, Docker

Honors & Awards

COMPETITIVE PROGRAMMING

2022	Fourth Place , The 2021 ICPC Asia Hanoi Regional Contest	Hanoi, Vietnam
2022	Champion , The 2021 ICPC National Vietnam Contest	Vietnam
2021	Top 62nd , Facebook Hacker Cup 2021	Online
2019	Bronze Medal , The 2019 ICPC Asia Danang Regional Contest	Da Nang, Vietnam
2019	Fourth Prize , Samsung Collegiate Programming Cup 2019 Final Round	Seoul, Korea
2018	Participant , Asia-Pacific Informatics Olympiad	Russia

ARTIFICIAL INTELLIGENCE

2022	First Prize , Student Scientific Research Award(EURÉKA)	HCMC, Vietnam
2022	Sixth Place , The 4th Large-scale Video Object Segmentation Challenge	New Orleans, U.S.A
2021	First Prize , Ho Chi Minh City AI-Challenge 2021	HCMC, Vietnam
2020	Fourth & Sixth Place , The 2020 DAVIS Challenge on Video Object Segmentation	Online

Publications

Visual-Language Transformer for Referring Video Object Segmentation

E-RO NGUYEN, NHAT HOANG-XUAN, MINH-TRIET TRAN

CVPRW'22

May 2022

Flexible Interactive Retrieval SysTem 3.0 for Visual Lifelog Exploration

NHAT HOANG-XUAN, HOANG-PHUC TRANG-TRUNG, E-RO NGUYEN, THANH-CONG LE, MINH-TRIET TRAN

IMCR'22

June 2022

Attention-based Hierarchical Fusion Network for Predicting Media Memorability

E-RO NGUYEN, HAI-DANG HUYNH-LAM, HAI-DANG NGUYEN, MINH-TRIET TRAN

MediaEval'21

Dec. 2021

PointRend with Attention Fusion Refinement for PolyPs Segmentation

E-RO NGUYEN, HAI-DANG NGUYEN, MINH-TRIET TRAN

MediaEval'21

Dec. 2021

Video Object Segmentation with Memory Augmentation and Multi-Pass Approach

THE-ANH VU-LE, HONG-HANH, E-RO NGUYEN, MINH-TRIET TRAN

CVPRW'20

Jun. 2020

Extracurricular Activity

Free Contest

PROBLEM SETTER

- Creating the algorithmic problems in free algorithmic contest for the community in Vietnam.

HCMC, Vietnam

Aug. 2017 – Mar. 2021

Student Activities Board

FOUNDING MEMBER

- Hosts student activities in university with several topics: academic, entertainment, volunteer, and sport.

HCMC, Vietnam

Aug. 2017 – Mar. 2021

References

1. Minh-Triet Tran

VICE PRESIDENT, HEAD OF SOFTWARE ENGINEERING LAB, DEPUTY HEAD OF ARTIFICIAL INTELLIGENCE LAB – UNIVERSITY OF SCIENCE, VNU-HCM, VIETNAM

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2. Minh-Hoai Nguyen

PRINCIPAL RESEARCH SCIENTIST & HEAD OF SMART EDGE - VINAI RESEARCH; DEPARTMENT OF COMPUTER SCIENCE - STONY BROOK UNIVERSITY, USA

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