Nguyen Khac Duy

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Education

Hanoi University of Science and Technology (HUST) **Sep. 2018 – Aug 2023**
Programme de Formation d'Ingénieurs d' Excellence au Vietnam (PFIEV) *Hanoi, Vietnam*
Engineer of Information System & Communication *GPA: 3.27/4 (Very Good Classification)*

HUS High School For Gifted Student **Sep. 2015 – Jun 2018**
Mathematics Department *GPA: 9.0/10*

Experience

Intelligent Vision System & Robotics Lab (IVSR) **Mar 2022 – August 2023**
AI Researcher

- Utilized deep learning techniques, computer vision, and sensor fusion to solve complex problems related to perception, navigation, and localization.
- Successfully implemented a novel position estimation system using deep learning frameworks, significantly improving the robot's ability to self-identify current position, velocity and orientation.
- Contributed to the design, implementation, and optimization of advanced algorithms and models for autonomous robotic systems.

VTI Cloud **Jun 2021 – Nov 2021**
Cloud Engineer Intern

- Built comprehensive understanding about the implementation of AWS solutions for clients, aligning with best practices and industry standards
- Assisted in technical documentation and training materials, facilitating knowledge sharing within the team.

Certificates & Achievements

AWS Solution Architects - Associate Oct. 2021
HUST Scholarships of Excellence Oct. 2022 & Mar. 2023
English - TOEFL iBT - 100/120 Mar. 2022

Publications

- Nguyen, K. D., Tran, D. T., Pham, V. Q., Nguyen, D. T., Inoue, K., Lee, J.-H., & Nguyen, A. Q. (2023). Learning Visual-inertial Odometry with Robocentric Iterated Extended Kalman Filter. Manuscript submitted for publication.

Projects

Learning Visual - Inertial Odometry with Robocentric IEKF | *Deep Learning, Pytorch, Python* **Aug 2023**

- Develop a robust visual-inertial odometry system using deep learning and Kalman filter for accurate and reliable motion estimation.
- Developed a deep learning model, leveraging convolutional neural networks (CNNs), to extract features from images.
- Integrated the deep learning model with an inertial measurement unit (IMU) to fuse visual and inertial sensor information using a Kalman filter.
- Trained the deep learning model on a diverse dataset, optimizing its ability to accurately recognize and track visual features across frames.

Cartoon Data Analyzing | *Hadoop, Spark, ELK Stack* **Mar 2023**

- Developed a data crawler using Beautiful Soup to extract data from websites and stored it in HDFS for storage and processing.
- Designed and implemented a data pipeline using Logstash to filter and preprocess data before pushing it into ElasticSearch for efficient search and visualization using Kibana
- Trained a machine learning model using the crawled data with SparkML and deployed it for real-time prediction using Spark Streaming.

Technical Skills

Languages: Python, HTML/CSS, JavaScript, SQL
Developer Tools: AWS, VSCode, PostgreSQL
Technologies/Frameworks: Linux, Pytorch, Kubernetes, Docker, Github