# Trong Tuan Nguyen

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## Education

**Hanoi University of Science and Technology** | Hanoi, Vietnam
*BASc, Major in Mathematics - Informatics (**Honors Program**)* | *Aug. 2017 – Jan. 2022*
**Thesis**: An Efficient Deep Learning approach to building a Logo Detection network.

## Work Experience

**WorldQuant, LLC – BRAIN** | June. 2018 – Present
*Research Consultant* | *Hanoi, Vietnam*
- Part-time and worked remotely to create and develop high-quality predictive signals (Alphas) through a research platform of the company (BRAIN).

**Techainer, JSC – techainer.com** | Nov. 2020 – Oct. 2022
*AI Engineer* | *Hanoi, Vietnam*
- Experimented and developed State-of-the-Art computer vision algorithms and machine learning techniques.
- Analyzed fail cases and datasets to improve company products in EKYC, Camera AI, and Document Extraction.
- Optimized machine learning system workflows to achieve the best performance in both accuracy and speed.
- Collaborated with the Infrastructure team to develop deployment solutions with expected to have scalability and zero downtime.

**Techainer, JSC – techainer.com** | April. 2022 – Oct. 2022
*AI TeamLead* | *Hanoi, Vietnam*
- Hosted weekly AI seminars for members to share their knowledge and domain of interests.
- Developed appropriate workflows for the AI team for better collaboration among AI engineers and other teams.
- Worked closely with the Board of Directors, especially the CAIO, to propose the development of AI components in both the short and long term.
- Experimented and developed AI development tools and frameworks (MLOps) to enhance and automate AI workflows in the company.

**AI VIET NAM – aivn.edu.vn** | July. 2021 – Present
*Computer Vision Lecturer, Teacher Assistant* | *Hanoi, Vietnam*
- Participated in the preparation and teaching of computer vision lectures and projects that included both theoretical and practical knowledge related to both traditional and modern methods.
- Directly guided students in the learning process of the AIO 2021 course to gain a deep knowledge of machine learning and its needed mathematics.
- Participated in research activities by contributing new ideas as well as feedback on proposed ideas.

**Surtech International Limited – surtech-group.com** | Dec. 2022 – Present
*Machine Learning Engineer* | *Qatar*
- Developed a machine learning model to segment all corrosion region on metal surfaces through high-resolution images.
- Optimized inferencing performance for model to run faster and able to run batch processing with high-resolution images.
- Built a Graphic User Interface app by using Streamlit and FastAPI and deployed it on an AWS instance.

## Open Source Projects

**Detecting lane line for autonomous car** – link | *Python, Pytorch* | March. 2020 – May. 2020
- Developed an end-to-end model to detect and classify free space in multiple lanes with scene identification
- Used ERFNet as a backbone architecture to classify all the pixels belonging to the road area in each lane
- Created new branch from ERFNet's encoder that can classify scene of the road
- Used homoscedastic uncertainty to weighting the loss function for multitasking CNN training
- The proposed model had been training on the BDD dataset for two weeks and archived 82.62% *mIoU* and 76.53% *Acc* with 23 *FPS*

**COVID-19 Forecasting and Control** – link | *Python*                                      May. 2020 – June. 2020
- Developed a stochastic model based on the SEIR model to predict the outbreak of the coronavirus pandemic
- Proposed measures to control the COVID-19 epidemic based on different time
- Collected a data about COVID-19 in China from Chinese government
- The proposed model have well fitted to real data
- The subsequent situation of the epidemic in China also coincided with the model's predictions

**Tripi Hotel Recommendation System** – link | *Scala, Spark, Clickhouse*                 Sep. 2020 – Nov. 2020
- Developed a machine learning system to rank hotels in Vietnam based on hotel services and user's responses
- Developed an autonomous process to clean and preprocess the raw data from the Clickhouse server
- The proposed model would categorize the user group and suggest hotels that are suitable for them
- Used Apache Spark as a computing framework to process BigData and Cassandra database
- Collabroted with the team to build and deploy a Mobile App

**Single Object Tracking with Mean-Shift** – link | *Python, OpenCV, NumPy*               Sep. 2022 – Oct. 2022
- Implemented Mean-Shift, CAM-Shift from scratch with Python.
- Applied other advanced handcraft features like Hough Transform, and SIFT to enhance the original algorithms.
- Solved the fixed window size problem of Mean-Shift by several approaches such as "Applying Mean-Shift not only in spatial space but also in scale space".
- This source code is a project material from the AIO 2022 course of AI VIET NAM that was conducted in the preparation phase.

## Academic Experience and Activities

**18th Workshop on Optimization and Scientific Computing**                                      April. 2020
*Audience*                                                                                  *Hanoi, Vietnam*
- Attended all science seminars during the Workshop
- Participated in extracurricular activities of the Workshop

**Developer Circles Vietnam Innovation Challenge**                                    Sep. 2020 – Dec. 2020
*Data Scientist*                                                                            *Hanoi, Vietnam*
- Co-created a complete application within up to 12 weeks, solving a selected problem of a collaborative company
- Enhanced time management as well as remote teamwork
- Improved the ability to explore the market and consumer needs
- Participated in the training and extracurricular activities of the program

**AI Challenge 2021** – codalab                                                        Nov. 2021 – Dec. 2021
*Memeber*
- An annual challenge hosted by Ho Chi Minh city government to promote AI development and to build Ho Chi Minh city into a smart city.
- Achieved a Consolation prize at the end of the challenge.

**Yody Hackathon 2022**                                                                        June. 2022
*Member*
- Organized by Yody Fashion with the desire to apply technology to solve the problems that Yody is facing.
- Developed and proposed an automated hiring process platform that extracts candidates' information in received resumes and ranks them by stated criteria.

**S'WINTER Workshop** – ceasyproject                                                          July. 2022
*Presenter*
- Hosted by Amsterdam high school students with the desire to give young people the opportunity to get closer to experts in Computer Science in particular and skills related to Technology in general.

**Techainer Coding Bootcamp 2022** – final award-winning                              June. 2022 – Nov. 2022
*TechLead*
- Three months summer Bootcamp hosted by Techainer for the purpose to train real-world experience engineers, meeting the market's actual needs.

**School of Applied Mathematics and Informatics Volunteer**                           Jan. 2018 – July. 2020
*Head of Communication*