Duong NGUYEN

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Profile

I am a **Machine Learning (Deep Learning)** practitioner. My research interests focus on **time series analysis**, especially on stochastic, noisy and irregularly sampled data modeling.

I am **autonomous** and **good at planning**. The experience of participating in several projects in different fields and countries has helped me develop **critical thinking skills** and the ability to **quickly adapt** to different work environments.

Skills

Time series analysis, Anomaly detection, NLP, Dynamical systems identification.

Programming languages: Python (6 years of experience).

Libraries: Pytorch, Tensorflow, Scikit-learn.

Languages

English: fluent,

French: advanced,

Vietnamese: mother tongue.

Education

Ph.D., IMT Atlantique 2020 (exp)
Variational Neural Networks for Noisy and Irregularly Sampled Time Series Modeling.
• **5 first author publications**,
• **2 first author manuscripts** under review (top journals),
• 5 conference presentations.
• **36 citations** (in 2 years).

M.S., University of Rennes 1 2017
Signal and Image Processing.
Summa cum laude.

Dipl. Ing., IMT Atlantique 2017
Machine Learning.

Research and Projects

Since Oct'17 **Maritime surveillance using AIS data**
- Create a multitask deep learning model for maritime surveillance using AIS data.
- Handle massive, noisy and irregularly sampled data.
- Propose a state-of-the-art anomaly detection model for AIS data.
- The **research prototype** is potentially used by **several companies**.
- Skills: **Python, Tensorflow, building models from scratch**.

Since Jul'18 **Learning dynamical systems from noisy and partial observations**
- Combine data assimilation and machine learning to handle the problems of noisy and partial observation in learning dynamical systems.
- Propose a new framework for learning stochastic and chaotic dynamical systems.
- Skills: **Python, Pytorch, benchmarking**.

Since Sep'18 **Fish detection**
- Collaborator of MERIDIAN (a Canadian multi-institutional consortium of ocean researchers, computer and data management professionals).
- Create a fish detectors from passive acoustic data using CNN.
- Skills: **Python, Pytorch, collaborative working**.

Professional Experience and Activities

Feb-Mar'20 **CLS (Collecte Localisation Satellites)** **France**
Visiting fellow
- Worked with AIS experts at CLS to evaluate my research prototype—***GeoTrackNet*** on real-life data: tested the limits of the model, explained the results.
- Discussed with engineers at CLS to integrate GeoTrackNet into CLS's big data platform MAS (Maritime Awareness System): how to run the model in a **distributed system** and in **real-time**.

Sep-Nov'19 **Dalhousie Institute for Big Data Analytics** **Canada**
Visiting graduate student
- Created a deep learning model to detect sablefish from maritime passive acoustic data.
- The detector is **under consideration for being used in real-life** by Canadian marine biologists.

Jun'19 **University of Washington** **US**
Visiting graduate student
- Established the collaboration between the University of Washington College of Engineering and IMT Atlantique.

Sep-Oct'18 **Dalhousie Institute for Big Data Analytics** **Canada**
Visiting graduate student
- Created a deep learning model to detect abnormal events in acoustic surveillance using Recurrent neural networks with stochastic layers.

Mar-Sep'17 **CLS (Collecte Localisation Satellites)** **France**
Engineering intern
- Made statistic reports and Improved the software that combines SAR and AIS data for maritime traffic surveillance.
- Finished the task 1.5 months ahead of schedule with excellent results.

Extracurricular Activities

May-Dec'18 **Translator**
Translated the *Deep Learning textbook (Ian Goodfellow, Yoshua Bengio and Aaron Courville)* into Vietnamese. Chapter Editor of one chapter.