

Truc VietLe

Machine Learning Developer

contacts

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http://trucvietle.me
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languages

Vietnamese: native
English: fluent

skills

data analytics
data visualization
geospatial analysis, GIS
machine learning (ML)
deep learning (DL)
(TensorFlow)
natural language
processing (NLP)
optimization (CPLEX)
web development
cloud (GCP, AWS)
agile & scrum
design thinking

programming

Python, Java
R, MATLAB, CPLEX
HTML5, JavaScript
MongoDB, SQL
♥ Linux, macOS

interests

data science (DS)
urban computing
DS for social good
ML for finance &
enterprise accounting
spatiotemporal data
geospatial visualization
internet of things (IoT)
NLP & chatbot

education

- jan 2013 – jun 2017 **Ph.D.** in Information Systems Singapore Management University, Singapore
Thesis: An integrated framework for modeling & predicting spatio-temporal phenomena in urban environments
Committee: Hoong Chuin Lau (Advisor), Robert J. Kauffman, Akshat Kumar, and Siyuan Liu (Penn State)
- aug 2014 – jul 2015 **Exchange Ph.D. Student** Carnegie Mellon University, Pittsburgh
Coursework: Machine Learning, Dynamic Optimization (graduate level)
Teaching Assistant (TA): Mobile Intelligence & Business
- jan 2011 – jul 2012 **M.Sc.** in Mathematical Sciences Nanyang Technological University, Singapore
Thesis: Pareto stable matchings: An empirical study
- aug 2005 – jul 2009 **B.Eng.** in Computer Engineering Nanyang Technological University, Singapore
Final Project: A mathematical model of hospital length of stay

experiences (recent)

- jul 2017 – present **SAP Asia Pte. Ltd.** Singapore
Machine Learning Developer
- Member of the ML Digital Core team, where we automate the enterprise financial accounting processes using machine learning.
- Invented a method to solve the complex multi-match problem in the cash application process using graph theory and DL with three pending patents (in the U.S. and German offices).
- Proposed an effective DL approach to generate payment advices from bank statement (BS) memo lines using named entity recognition (NER) that boosts the accuracy of matching BS to open invoices.
- may – jul 2016 **IBM Research** Singapore
Research Intern
- Designed and implemented a completely passive system for online learning and prediction of people's dwell time at Wi-Fi hotspots.
- The system was implemented using linear SVM classifier and stochastic gradient descent (SGD) training via the scikit-learn package.
- aug – dec 2012 **Living Analytics Research Centre** Singapore
Research Engineer
- Designed and experimented with incentives for crowd and congestion control in the Resorts World Sentosa (RWS) theme park via a pilot web app and mobile platform: <http://d-larc-rws.appspot.com>.

projects (selected)

- aug 2016 – jun 2017 **Singapore Management University** Singapore
Law enforcement resource optimization
Model and learn the spatiotemporal distribution of crime incidents in Singapore over multi-year periods. Propose an optimal solution to dynamic patrolling policy under uncertainty and the expected incidents.
- jun – dec 2015 **Carnegie Mellon University** Pittsburgh, P.A.
Fine-grained city-wide modeling of traffic flow and congestion
Collected large-scale speed readings from traffic sensors in two U.S. cities: Pittsburgh and Washington, D.C. Proposed efficient local Gaussian processes based on matrix factorization for real-time and fine-grained inferences of traffic flow throughout the road networks.

publications (selected)

Jonathan Chase, Jiali Du, Na Fu, **Truc Viet Le** & Hoong Chuin Lau. ***Law Enforcement Resource Optimization with Response Time Guarantees***. The 2017 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2017), Honolulu, Hawaii, USA.

Truc Viet Le, Baoyang Song & Laura Wynter. ***Real-time Prediction of Length of Stay Using Passive Wi-Fi Sensing***. The 2017 IEEE International Conference on Communications (IEEE ICC 2017), Internet of Things (IoT) Track, Paris, France.

Truc Viet Le, Richard Oentaryo, Siyuan Liu & Hoong Chuin Lau (2017). ***Local Gaussian Processes for Efficient Fine-Grained Traffic Flow Prediction***. IEEE Transactions on Big Data (TBD) Special Issue on Urban Computing, 3(2), 194–207.

Truc Viet Le, Siyuan Liu & Hoong Chuin Lau. ***A Reinforcement Learning Framework for Trajectory Prediction Under Uncertainty***. The 22nd European Conference on Artificial Intelligence (ECAI 2016), The Hague, Netherlands.

Truc Viet Le, Siyuan Liu, Hoong Chuin Lau & Ramayya Krishnan. ***Predicting Bundles of Spatial Locations from Learning Revealed Preference Data***. The 14th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2015), Istanbul, Turkey.

patents (selected, pending)

Truc Viet Le, Sean Saito, Rajalingappaa Shanmugamani & Chaitanya Joshi. ***A Graphical Approach to the Multi-match Problem***. Filed in December 2018.

Sean Saito, **Truc Viet Le**, Rajalingappaa Shanmugamani & Chaitanya Joshi. ***Representing Sets of Entities for Matching Problems***. Filed in December 2018.

miscellaneous

- apr 18, 2016 **Gave a public talk at Python User Group** Singapore
Reinforcement learning using Python: <https://youtu.be/Mwj9Qz9fjBU>.