Bagas Abisena Swastanto

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Education

2015 (July) **Lisbon Machine Learning Summer School (LXMLS) 2015**

Instituto Superior Technico, Portugal

A summer school of Machine Learning with focus on Natural Language Processing. Acceptance rate: 40%. link

2014-2016 (Expected) **MSc in Computer Science**

Delft University of Technology, The Netherlands

Current GPA: 8.13/10 (3.88/4.00). Expected graduation in September 2016.

2007-2011 **BSc in Telecommunication Engineering**

Bandung Institute of Technology, Indonesia

GPA: 3.43 of 4.00

Work Experience

September 2011-August 2014 **Network Engineer** Ericsson Indonesia

Project Highlight: Deployed the biggest fixed IP Multimedia Subsystem (IMS) network in the Asia Pacific for Telkom Indonesia between 2012-2013 with a team consisted of multinational engineers. My contributions are building a production DNS/ENUM system which translates millions of customer PSTN number to SIP URI and building a production DHCP failover system which redirects millions of IMS subscriber to one of the IMS network. Both systems are still in used by the client in production.

Technical Experience

Projects

- **Long-Term Time Series Forecasting with Gaussian Process Regression**

  Master thesis. A simple Gaussian Process model with an RBF kernel is not good for a long-term time series forecasting. I propose an advanced kernel composition through addition and multiplication procedure. The kernel combination is able to encode the prior information about non-stationarity in the time series data such as trend and seasonality. The project is written in Python.

- **Learning under Covariate Shift**

  Machine Learning course final project. The goal is to perform classification on a dataset which has been biased by an unknown covariate shift. My solution: learn the weighing ratio between the training and test set distribution and classify using a weighted SVM. Got 9/10 grade for the report.

- **Face Identification using Local Binary Pattern**

  Computer Vision course final project. Implementation are written in Python using combination of Numpy, scikit-learn, and openCV. Achieved 100% accuracy for the YALE face dataset and 80% accuracy for the Labelled Faces in the Wild dataset. Report and code are available.

- **Mortgage Default Prediction using Neural Network (2015)**

  Final assignment (in group) for Neural Network course, with collaboration with Ernst & Young Netherlands. Predict the default of mortgage customer using feedforward neural network. Our solution: First, we rebalance the dataset by upsampling since the number of default customers is only 5%. Then we perform feature selection with Genetic Algorithm. Lastly, we train the neural network using Levenberg-Marquadt

and Extreme Learning Machine algorithm. We achieved the highest grade for the project.

- **NIST Digit Handwriting Recognition (2015)**

  Group-based assignment for Pattern Recognition course. Implementation are written in MATLAB.

  - Achieved 97% accuracy with 5000 training digits with a radial basis kernel Support Vector Machine (SVM). We use pixel as representation.
  - Achieved 75% accuracy with 100 training digits with 1-Nearest Neighbour (1-NN). We use euclidean dissimilarity as representation.
- **Video Processing Application for Intelligent Traffic Monitoring using Optical Flow Technique**

  Bachelor thesis project. I calculate vehicle speed using OpenCV's implementation of*optical flow* motion tracking algorithm. I use that information to classify whether the road is jammed or not. Got an A for thesis Link
- **Cravn - Wishlist Sharing Social Media (2013)**

  A prototype for business ideaCravn. This is a working Android application in conjunction with a restful API backend that is written in Grails and later ported to Django-restful framework. Data is modelled with graph in Neo4j graph database instead of a traditional SQL, to enable an easy relationship and recommendation analysis.
- **Rumpy (2012)**

  Prototype for a hobby project named Rumpy, an instant messenger application over websocket protocol. Client was built in Android and server was developed in Java on top of Netty Framework.

Programming Languages

- **Python** Comfortable in using Python for scientific computing and data analysis.
- **Others** I use **Matlab** for coursework in Pattern Recognition, Neural Network, and Machine Learning,**R** for statistical data analysis, **Javascript** for D3.js visualization, **Java** for Android, and **Scala** for Apache Spark. Apart from programming, I have great understanding about **TCP/IP** stack.

Achievements

- **Indonesia Endowment Fund for Education Scholarship Awardee**A full scholarship covers tuition and living cost for my master study in the Netherlands.
- **Indonesia ICT Awards (INAICTA) 2013 Finalist** The business idea Cravn was selected as one of eight finalists (category: Digital Interactive Media) from thousands of participants in the annual nationwide ICT application competition held by the Ministry of Communication and Information Republic of Indonesia.
- **Samsung Developer Competition 2013 Finalist** Finalist in an Android application developer competition held by Samsung Indonesia for the Cravn prototype.
- **Ericsson Indonesia Team of the Quarter Q1 2013**The team successfully deployed the fixed IMS network for Telkom Indonesia, first time in the Asia Pacific
- **Ericsson Indonesia Employee of the Month May 2014**The award was given to me for successfully implementing and testing DHCP failover servers across 4 cities in Indonesia under one month giving the project one month lead time.

Organizational Experience

- **Indonesian Student Association in The Netherlands (2014-2015)** Leading a demographic research project which the goals are to collect student information from various sources (survey, social media), make analysis, and visualize the findings to map the potential of Indonesian scholars in the Netherlands. Result can seen in the organization website.
- **Electrical Engineering Student Union Institut Teknologi Bandung (2010)**Leading the division of Internal Affairs with team of 10 people. We created several breakthrough programs such as graduation gala dinner and movie night that are now become the routine in the organization.
