

Fajri Koto

PHD CANDIDATE · NLP

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Education

The University of Melbourne

Melbourne, Australia

PH.D. IN COMPUTER SCIENCE

Jul. 2018 - PRESENT

- Research topic: Neural abstractive summarization and discourse analysis
- Supervisor: Prof. Timothy Baldwin, and Dr. Jey Han Lau
- Required course: Statistical machine learning (Grade: H1)
- Awardee of Australia Awards Scholarship (AAS)

University of Indonesia

Depok, Indonesia

M.SC. IN COMPUTER SCIENCE

Feb. 2013 - Feb. 2014

- Graduated *Cum Laude* with CGPA 3.72 out of 4.00
- Thesis: *A Comparative Study over Twitter Sentiment Analysis: Which Features are Good?*
- Supervisor: Dr. Mirna Adriani
- Courses: Information Retrieval, Data Mining, Image Processing, Machine Learning.
- Awardee of Fast-track DIKTI scholarship

Nara Institute of Science and Technology (NAIST)

Nara, Japan

INTERNSHIP STUDENT (EXCHANGE)

Jun. 2013 - Aug. 2013

- Working on speech technology in Augmented Human Communication Lab, NAIST
- Supervisor: Dr. Sakriani Sakti, Dr. Graham Neubig, Prof Tomoki Toda, Prof Satoshi Nakamura

University of Indonesia

Depok, Indonesia

B.SC. IN COMPUTER SCIENCE

Aug. 2009 - Feb. 2013

- Graduated *Cum Laude* with CGPA 3.77 out of 4.00
- Thesis: *Implementation of Keyboard Driver with Touch Sensor and USB port Using AVR ATxmega 256 A3BU*
- Supervisor: Dr. Bob Hardian

Publications

CONFERENCE

- 2020 [Fajri Koto](#), Afshin Rahimi, Jey Han Lau, Timothy Baldwin. "IndoLEM and IndoBERT: A Benchmark Dataset and Pre-trained Language Model for Indonesian NLP". In the 28th COLING 2020, Barcelona, Spain (virtual), 2020
- 2020 [Fajri Koto](#), Jey Han Lau, Timothy Baldwin. "Liputan6: A Large-scale Indonesian Dataset for Text Summarization". In the Proceedings of ACL-IJCNLP 2020, Suzhou, China (virtual), 2020.
- 2020 [Fajri Koto](#), Ikhwan Koto. "Towards Computational Linguistics in Minangkabau Language: Studies on Sentiment Analysis and Machine Translation". In the Proceedings of the 34th Pacific Asia Conference on Language, Information and Computation (PACLIC), Hanoi, Vietnam (virtual), 2020.
- 2019 [Fajri Koto](#), Jey Han Lau, Timothy Baldwin. "Improved Document Modelling with a Neural Discourse Parser". In the Proceedings of the 17th Australasian Language Technology Workshop (ALTA), Sydney, Australia, December 2019 (oral presentation).
- 2017 [Fajri Koto](#), Gemala Y. Rahmaningtyas. "InSet Lexicon: Evaluation of a Word List for Indonesian Sentiment Analysis in Microblogs". IEEE in the 21st International Conference on Asian Language Processing (IALP), Singapore, December 2017 (oral presentation).

- 2016 Fajri Koto. "A Publicly Available Indonesian Corpora for Automatic Abstractive and Extractive Chat Summarization". In the Proceedings of the 10th International Conference on Language Resources and Evaluation (LREC), Portorož, Slovenia, 2016 (poster presentation).
- 2016 Fajri Koto, Sakriani Sakti, Graham Neubig, Tomoki Toda, Mirna Adriani, Satoshi Nakamura. "Automatic Detection of Memorable Spoken Quotes". In the 2016 Spring Meeting of the Acoustical Society of Japan, Yokohama, Japan, 2016.
- 2016 Fajri Koto, Omar Abdillah. "Automatic Advisor for Detecting Summarizable Chat Conversations in Online Instant Messages". Springer in the 12th International Conference on Computing and Information Technology (IC2IT), Thailand, July 2016 (oral presentation)
- 2015 Fajri Koto, and Mirna Adriani. "HBE: Hashtag-Based Emotion Lexicons for Twitter Sentiment Analysis". ACM in The 6th Forum for Information Retrieval (FIRE 2015), Gandhinagar, India, December 2015 (poster presentation).
- 2015 Fajri Koto, and Mirna Adriani. "A Comparative Study on Twitter Sentiment Analysis: Which Features are Good?". Springer in The 20th International Conference on Applications of Natural Language To Information Systems (NLDB 2015), Passau, Germany, June 2015 (poster presentation)
- 2015 Fajri Koto, and Mirna Adriani. "The Use of POS Sequence for Analyzing Sentence Pattern in Twitter Sentiment Analysis". IEEE in The 8th International Symposium on Mining and Web (MAW15), Gwangju, Korea (join with the 29th AINA Conference), March 2015 (oral presentation).
- 2015 Fajri Koto, Sakriani Sakti, Graham Neubig, Tomoki Toda, Mirna Adriani, Satoshi Nakamura. "A Study On Natural Expressive Speech: Automatic Memorable Spoken Quote Detection". Springer in The 6th International Workshop on Spoken Dialog Systems (IWSDS), Busan, Korea, January 2015 (oral presentation).
- 2014 Fajri Koto, Sakriani Sakti, Graham Neubig, Tomoki Toda, Mirna Adriani, Satoshi Nakamura. "The Use of Semantic and Acoustic Features for Open-Domain TED Talk Summarization". IEEE in The 6th Asia Pacific Signal and Information Processing Association (APSIPA). Siem Reap, Cambodia, December 2014 (poster presentation).
- 2014 Fajri Koto. "SMOTE-Out, SMOTE-Cosine, and Selected-SMOTE: An Enhancement Strategy to Handle Imbalance in Data Level". IEEE in The 6th International Conference on Advanced Computer Science and Information Systems (ICACSIS), Jakarta, Indonesia, October 2014 (oral presentation).
- 2014 Fajri Koto, Sakriani Sakti, Graham Neubig, Tomoki Toda, Mirna Adriani, Satoshi Nakamura. "Memorable Spoken Quote Corpora of TED Public Speaking". IEEE in The 17th Oriental COCODA Conference. Phuket, Thailand, September 2014 (oral presentation).

PATENT

- 2020 Gilang Kusuma Jati, Agus Kurniawan, Fajri. "Personal Safety Device And Operating Method Therefor". Patent US 2020/0082699-A1. Issued 12 Mar 2020. AND Patent KR WO/2018/124584-A1. Issued 7 May 2018.
- 2017 Agus Kurniawan, Fajri, Omar Abdillah. "Apparatus and Method for Sharing Personal Electronic - Data of Health". Patent US 2017/0177797-A1. Issued 22 Jun 2017.
- 2015 Yanuar Rachman, Omar Abdillah, Fajri. "Method and Apparatus for Displaying Summarized Data". Patent US 2016/0147397-A1. Issued 26 May 2016.

BOOK

- 2016 Agus Kurniawan, Fajri, Gilang Kusuma Jati. "Panduan Dasar Pemrograman Tizen". Published by Samsung Research Indonesia. Jakarta, 2016.

Professional Experience

The University of Melbourne

Melbourne, Australia

ACADEMIC TUTOR

Feb. 2020 - Jun. 2020

- COMP90042 - Natural Language Processing (Graduate Level) - Dr. Jey Han Lau

PT NextPolicy

Jakarta, Indonesia

RESEARCHER (PART TIME)

Aug. 2019 - Present

- Conducting sentiment analysis with deep learning model
- Topic: Indonesian government, COVID-19

PT KMKLabs (EMTEK)

Jakarta, Indonesia

DATA SCIENTIST

Apr. 2016 - Oct. 2017

- Building spam detection system using Sklearn and Flask framework.
- Working on Recommendation System for Liputan6 (news portal) and Vidio (video channel).
- Jointly working on Data Pipeline and Analysis using Airflow scheduler.
- Working environment: AWS, GCP, Python, Ruby, PHP.

Samsung R&D Institute Indonesia

Jakarta, Indonesia

SENIOR STAFF (RESEARCH ENGINEER)

Jun. 2014 - Apr. 2016

- Delivering 3 Patents (3 US, 1 WO) for Head Quarter in Seoul.
- Publishing works on summarization at LREC 2016 and IC2IT (IEEE) 2016.

PT Astra International

Jakarta, Indonesia

ANDROID DEVELOPER (INTERN)

Jun. 2012 - Aug. 2012

- Jointly developing two internal mobile apps: Wall-E (service adviser application) and DEC (Delivery Excellence to Customer)

Faculty of Computer Science, University of Indonesia

Depok, Indonesia

TEACHING ASSISTANT

Jun. 2010 - Aug. 2013

- Statistic and Probability (Aug 2013 - Dec 2013) - Ika Alfina, M.Sc.
- Theory of Language and Automata (Feb 2013 - Jun 2013) - Dr. Dina Cahyati
- Statistic and Probability (Aug 2012 - Dec 2012) - Ika Alfina, M.Sc.
- Discrete Math 1 (Feb 2012 - Jun 2011) - Prof. Belawati H. Widjaja
- Database (Aug 2011 - Dec 2011) - Ika Alfina, M.Sc.
- Calculus 1 (Aug 2010 - Dec 2010) - Dr. Kasiyah Junus

Talks

NLP MeetUp, 4 Dec. 2019

Sydney, Australia

Improved Document Modelling with a Neural Discourse Parser.

BukaTalk, 13 Mar. 2018

Jakarta, Indonesia

A sharing session about Data Scientist Career.

Computer Festival, 30 Jul. 2017

Jakarta, Indonesia

An annual event held by Faculty of Computer Science, University of Indonesia. I was invited to teach machine learning for intermediate level.

Wrangle Conference, 9 Dec. 2016

Selangor, Malaysia

Invited as a speaker in a single-day, single-track industry event about the principles, practice, and application of Data Science across multiple data-rich industries.

Data Science Weekend (DSW), 3 Dec. 2016

Yogyakarta, Indonesia

Invited as a Trainer and Keynote Speaker, I delivered machine learning course in beginner and intermediate level for future data scientist. (<http://datascienceweekend.id/>)

Data Science Weekend (DSW) Roadshow, 12 Nov. 2016

Jakarta, Indonesia

A sharing session about Data Scientist role in KMK Labs.)

Projects

Neural Discourse Parser (RST), 2019 - <https://github.com/fajri91/NeuralRST>

Implementing state of the art Neural Discourse Parser with Pytorch and achieve performance similar to the original paper.

Neural Sentiment Analysis over Indonesian Political Tweets, 2019 - PT. Next Policy

Crawling and predicting Twitter stream before-and-after the inauguration of the new Government Cabinet in 2019. Multi-classification over three polarity classes are conducted using LSTM and Fasttext embedding.

LinkedIn Crawler, 2016 - PT. EkruT Teknologi Pasifik

A service that crawles employee and employer information from LinkedIn, implemented using Selenium and PostgreSQL.

Sotoy - Spam detection service, 2016 - PT. KMKLabs

A service that handles Indonesian spam texts in comment section of vidio.com and liputan6.com.

S-Green, 2015 - PT. Samsung R&D Institute Indonesia

Android application for recording utility usage during business travel.

Honors & Awards

INTERNATIONAL

- 2019 **Student travel bursary recipient**, 17th Australian Language Technology Workshop (ALTW) *Australia*
- 2017 **Awardee**, Australia Awards Scholarship for PhD (from 5,300+ applicants) *Australia*
- 2014 **Best session presenter**, International Conference on Advanced Computer Science and I.S. *Jakarta, Indonesia*
- 2013 **Receiver**, JASSO Scholarship for Summer Internship in NAIST *Nara, Japan*

DOMESTIC

- 2014 **Cum Laude Award (Top 5)**, Graduation of Master Degree in CS, University of Indonesia *Depok, Indonesia*
- 2013 **Cum Laude Award (Top 5)**, Graduation of Bachelor Degree in CS, University of Indonesia *Depok, Indonesia*
- 2012 **Receiver**, Fast Track DIKTI Scholarship for Bachelor and Master Degree *Depok, Indonesia*
- 2008 **7th Place**, Senior High School Math Competition in West Sumatra Province (out of 1,000+) *Padang, Indonesia*
- 2006 **Top 200 National**, PASIAD - Junior High School Math Competition (out of 40,000+) *Indonesia*
- 2006 **Semi Finalist**, Junior High School Physics Competition in West Sumatra Province *Padang, Indonesia*

Skills

- Programming** Python, Java, Ruby, C, C++, LaTeX
- Deep Learning** Pytorch, Tensorflow, Keras
- NLP** Expertise in Core NLP tasks
- Collaboration** Git, JIRA, Pivotal Tracker, Pair Programming
- Database** PostgreSQL, MySQL, Google Big Query, Redis
- Software Engineer** Rails (Ruby), Flask (Python), Airflow, Vagrant, Test Driven Development
- Cloud** Amazon Web Service, Google Cloud Platform
- Language** Minangkabau (native), Indonesia (native), English (professional)
- Certificates** Deep Learning Specialization – Coursera ([deeplearning.ai](https://www.coursera.org/learn/deeplearning-ai))

Reviewing Invitation

- 2018 NAACL (Secondary reviewer) for 1 submission
- 2017 Knowledge-Based System Elsevier Journal for 1 submission

Organization Experience

IYKRA and Data Science Indonesia

Jakarta, Indonesia

INDUSTRY EXPERT

Jan. 2017 - Mar. 2018

- Arranging a curriculum of Data Science course together with other Industry Experts.
- Teaching machine learning course for professionals in Jakarta.

Student Representative Council, Faculty of Computer Science, UI

Depok, Indonesia

HEAD OF COMMISSION-I (PSDM)

Jan. 2012 - Dec. 2012

- Managing 8 people for 1 year with works involve recruitment, monitoring BEM Fasilkom, organizing internal outing days, conducting leadership training and seminars for students.

SALAM, UI

Depok, Indonesia

DEPUTY OF MASS MEDIA, MED-C

Jan. 2012 - Dec. 2012

- Handling monthly newspaper and weekly articles, mainly involved in organizing and designing the publication.

Reference

Prof. Timothy Baldwin (tb@ldwin.net) : Ph.D. supervisor at The University of Melbourne

Dr. Jey Han Lau (jeyhan.lau@gmail.com) : Ph.D. supervisor at The University of Melbourne