Aldrian Obaja Muis

Curriculum Vitae

CONTACT
INFORMATION

E-mail: aldrianobaja.m@gmail.com   *WWW:* https://justhalf.github.io
GitHub: http://github.com/justhalf

RESEARCH
INTERESTS

Natural language processing, Hypergraph-based Models, Combinatorics, Algorithm

WORK
EXPERIENCE

Senior Data Scientist (Mechanism Design)

Sembly Inc., Singapore   **Jul '20 - Present**

- Designing and developing the mechanisms driving users behavior for an online discussion web platform we are building
- Giving consultation for the NLP-focused machine learning team

Senior Data Scientist

Traveloka Pte. Ltd., Singapore   **Oct '19 - Jun '20**

- Managing a chatbot product with an impact of $1.8mio annually, responsible for both directing the technical aspects as well as communication with the business stakeholders
- Worked on an internal dataset creation, to further support machine learning environment in the company
- Team lead: Dr. Debaditya Goswami

Research Assistant

Singapore University of Technology and Design (SUTD), Singapore   **Jul '15 - Jun '17**

- Exploring semantic representations using graphical models for structured prediction
- Supervising undergraduate student researchers in research projects
- Advisor: Asst. Prof. Lu Wei

Research Engineer

Knorex Pte. Ltd., Singapore   **Jul '13 - Jun '15**

- Designed and performed experiments for text classification on news articles
- Implemented and extended existing method on concept extraction for key terms extraction
- Redesigned and optimized a system for efficient distributed computing
- Developed and maintained in-house tools for natural language processing

EDUCATION

Carnegie Mellon University, Pittsburgh, PA   **Aug '17 - Aug '19**

Master of Language Technology, Language Technology Institute

- Worked on LORELEI project under Prof. Teruko Mitamura and Prof. Eduard Hovy, focusing on recognizing events and their attributes from text in low-resource language
- Systematically tested several methods (heuristics and deep learning) to find the most contributing factors across 25 different languages

National University of Singapore, Singapore   **Jul '09 - Jul '13**

Undergraduate, School of Computing

- Bachelor of Computing (Computer Science, First Class Honours)
- Recipient of Lijen Industrial Development Award (Second top student)
- Majoring in Computer Science with focus area on Computer Networks
- Taking the course under Turing (research) Program
- Minoring in mathematics

PUBLICATIONS

**Low-resource Cross-lingual Event Type Detection in Documents
via Distant Supervision with Minimal Effort**   **Aug '18**
Aldrian Obaja Muis, Naoki Otani, Nidhi Vyas, Ruochen Xu, Yiming Yang, Teruko Mitamura, and Eduard Hovy.
In Proceedings of the 27th International Conference on Computational Linguistics (**COLING 2018**). Long paper

Labeling Gaps Between Words: Recognizing Overlapping Mentions with Mention Separators   **Sep '17**
Aldrian Obaja Muis and Wei Lu
In Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing (**EMNLP 2017**). Long paper. [Supplementary Material].

MalwareTextDB: A Database for Annotated Malware Articles   **Aug '17**

Sweekiat Lim, Aldrian Obaja Muis, Wei Lu and Chen Hui Ong
In Proceedings of the conference of the Association for Computational Linguistics (**ACL 2017**). Long paper. [New Dataset].

Efficient Dependency-guided Named Entity Recognition   Feb '17
Zhanming Jie, Aldrian Obaja Muis and Wei Lu
In Proceedings of the 2017 Conference on Artificial Intelligence (**AAAI-17**)
- Performed the theoretical complexity analysis of the model via combinatorial analysis

Learning to Recognize Discontiguous Entities   Nov '16
Aldrian Obaja Muis and Wei Lu
In Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing (**EMNLP 2016**). Long paper. [Supplementary Material]
- Includes some combinatorial analysis in the supplementary

Weak Semi-Markov CRFs for NP Chunking in Informal Text   Jun '16
Aldrian Obaja Muis and Wei Lu
In Proceedings of the 2016 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (**NAACL 2016**). Short paper

PROJECTS

Language Technology Institute, **Carnegie Mellon University**, Pittsburgh, PA

Hierarchical RNN for Diagnosis Code Prediction (Class Project)   **Aug '17 - May '18**
- Worked on a novel hierarchical recurrent neural network (RNN) model for hierarchical classification for diagnostic code prediction using MIMIC-III dataset
- Advisors: Graham Neubig and Matthew R. Gormley

Incorporating Emotions for Emoji Prediction (Class Project)   **Jan '18 - May '18**
- Proposed and worked on evaluating ways to incorporate emotion information to improve emoji prediction [workshop paper]
- Advisors: Eduard Hovy and Teruko Mitamura

Analyzing Microaggressions from Self-reported Accounts (Class Project) **Jan '18 - May '18**
- Utilized standard machine learning models to analyze aspects of microaggressions
- Advisors: Yulia Tsvetkov and Alan W Black

School of Computing, **National University of Singapore**, Singapore

Final Year Project (Honours Project)   **May '12 - Apr '13**
- Evaluated an existing algorithm for domain specific Word Sense Disambiguation through comparison with other algorithms
- Advisor: Ng Hwee Tou

Web Project Developer for TEAMMATES   **May '12 - Jun '12**
- Evaluated existing code and improve testing time to 5 times faster by refactoring and recoding the whole testing phase in 6 weeks
- Migrated the application from a client-based Javascript website into server-based JSP website

Undergraduate Research Opportunity Program (UROP)   **May '11 - Apr '12**
- Implemented and evaluated existing algorithm on extracting data from the Web under different domain through extensive experiment
- Advisor: Stéphane Bressan

Undergraduate Student Researcher (USR)   **May '10 - Dec '10**
- Analyzed the quality of translation from English to Malay and English to Indonesian
- Adapted existing Malay word stemming program into Indonesian
- Studied the language differences between Malay and Indonesian
- Advisor: Prof. Ng Hwee Tou

CO-CURRICULAR ACTIVITIES

NUSSU commIT (formerly known as NUSSU CBLC until Jun '11)

Head of Technical Cell   **Jul '12 - Jun '13**
Assistant Head of Technical Cell   **Jul '10 - Jun '12**
Member of Technical Cell   **Aug '09 - Jun '10**
- Maintained 100+ computers in the computer clusters in NUS through general cleanup, backup, and automated updates

- Developed public and internal website of NUSSU commIT for intensive daily usage

Technical Head *of NUSSU CBLC IT Flair 2010*   **Feb '10 - Apr '10**

- IT Flair is a combination between IT Fair and Flea market
- Developed website as publication media for the event and for selling second-hand items

Vice Project Director *of NUSSU CBLC Cyberia Camp 2010*   **Oct '10 - Dec '10**

- Cyberia Camp is a 3-day camp for certified Adobe Photoshop and Illustrator Training
- Led a team of 14 people to successfully organized the camp and received overwhelming response and positive feedback

NUS ISCF (Indonesian Students' Christian Fellowship)

Executive Committee   **Jul '11 - May '13**

- Managed a weekly group meeting of around 40 students

ACADEMIC EXPERIENCE	Language Technology Institute, **Carnegie Mellon University**, Pittsburgh, PA

Teaching Assistant (TA)

For 11-711: Algorithms for NLP   **Aug '18 - Dec '18**

- Delivered a lecture on Conditional Random Fields
- Conducted office hours and recitation sessions
- Instructors: Yulia Tsvetkov, Robert Frederking

School of Computing, **National University of Singapore**, Singapore

Teaching Assistant (TA)

Class tutor for CS1231: Discrete Structures	**Aug '12 - Nov '12**
Laboratory TA for CS1020: Programming Methodology 2	**Jan '12 - Apr '12**
Laboratory TA for CS1020: Programming Methodology 2	**Aug '11 - Nov '11**
Laboratory TA for IT1006: MATLAB Programming	**Jan '11 - Apr '11**

- Conducted a mock exam to help students prepare for their final exams
- Delivered presentations in class of around 14 to 22 students every week during the term

AWARDS	**Lijen Industrial Development Award**	**Jul '13**
	• Represents the second top student in the batch	
	Dean's List Recipient for 4 (four) semesters	**Jul '09 - Dec '11**
	• Represents top 5% of the cohort in Jul '09, Jan '10, Jan '11, Jul '11	
	Scholarship from Indonesian Government to pursue tertiary education	**Jul '09 - Jun '13**
	Bronze medal, International Mathematical Olympiad in Bremen, Germany	**Jul '09**
	Bronze medal, International Mathematical Olympiad in Madrid, Spain	**Jul '08**
	Absolute winner, National Mathematical Olympiad in Surabaya, Indonesia	**Sep '07**
	Bronze medal, National Mathematical Olympiad in Semarang, Indonesia	**Sep '06**
	Gold medal, National Mathematical Olympiad in Jakarta, Indonesia	**Sep '05**

SKILLS	Computer Programming:

- Python, Go, Java, JavaScript, Perl, C/C++

Software Engineering:

- Designed and developed web and desktop applications

Information/Internet Technology:

- Maintained small to moderate size computer networks

Mathematics:

- Combinatorics, especially graph theory

HOBBIES AND INTEREST	Music (playing piano and guitar, leading a youth choir in church), creative literature, reading books

LANGUAGES	Indonesian (mother tongue), English