

DERRY WIJAYA

PERSONAL DATA

NAME: Derry Tanti Wijaya, Ph.D.
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INTERESTS

Natural Language Processing, Multilingual and Multimodal Representation Learning, Low Resource Machine Translation, Information Extraction, Knowledge Bases

WORK EXPERIENCE

09/2018–now	Assistant Professor (Tenure-track), Computer Science Boston University
2016–2018	Postdoctoral Researcher, Computer and Information Science University of Pennsylvania Advisor: Chris Callison-Burch (ccb@upenn.edu)
2009–2010	Research Assistant, Artificial Intelligence Lab University of Geneva, Switzerland
2008–2009	Software Engineer Intern Google Zurich, Switzerland
2004–2006	Lecturer, Business IT Department Institute of Technical Education, Singapore

EDUCATION

2016	DOCTORATE DEGREE, Carnegie Mellon University Language Technologies Institute, School of Computer Science Advisor: Tom Mitchell (Tom.Mitchell@cmu.edu) Thesis was part of the NELL (Never Ending Language Learning) project
2008	B.Sc. (2000-2004), M.Sc. (2006-2008), National University of Singapore School of Computing Advisor: Stéphane Bressan (steph@nus.edu.sg)

GRANTS

2020	ExploreCSR: Google Grant to Organize a Computer Science Research Workshop for Female Undergraduates (Fall 2020) (PI), <i>Amount</i> : \$18k
2019–2022	Learning with Less Labels (LwLL) (Co-PI) DARPA (Prime: UC Berkeley), <i>Amount</i> : \$5.7m
2019–2020	Semi-supervised Learning of Multimodal Representations (Co-PI) DARPA (Prime: University of Pennsylvania), <i>Amount</i> : \$200k
2019–2020	Bridging Linguistic and Visual Knowledge through Visual Genome (PI) Hariri Institute Research Incubation Award, <i>Amount</i> : \$28k
2018–2022	BIGDATA: IA: Multiplatform, Multilingual, and Multimodal Tools for Analyzing Public Communication in over 100 Languages (Co-PI) NSF (Prime: Boston University), <i>Amount</i> : \$1m

AWARDS

2019–2022	Cecile Kaplan Dalton Career Development Professorship, Boston University,
2013	Anita Borg Scholarship, Google
2010–2013	International Science and Technology Fellowship, Fulbright

PUBLICATIONS

LAL: Linguistically Aware Learning for Scene Text Recognition, Y. Zheng, W. Qin, **D. Wijaya**, M. Betke, In *Proceedings of ACM Multimedia, 2020*. ACM (to appear)

Learning to Scale Multilingual Representations for Vision-Language Task, A. Burns, D. Kim, **D. Wijaya**, K. Saenko, B. Plummer, In *Proceedings of ECCV, 2020*. Springer [LINK](#)

Multi-label and Multilingual News Framing Analysis, A. F. Akyurek, L. Guo, R. Elanwar, M. Betke, P. Ishwar, **D. Wijaya**, In *Proceedings of ACL, 2020*. ACL [LINK](#)

Informativity in Image Captions vs. Referring Expressions, E. Coppock, D. Dionne, N. Graham, E. Ganem, S. Zhao, S. Lin, W. Liu, **D. Wijaya**. In *Proc. of Probability and Meaning, 2020* (PaM2020). ACL SIGSEM

Agenda Setting as an Antecedent of Political Expression on Social Media: The Gun Violence Case, L. Guo, Z. Yiyang, K. Mays, **D. Wijaya**, M. Betke, In *Proceedings of 70th Annual International Communication Association Conference, 2020*.

Discussions of miscarriage and preterm births on Twitter, N. Cesare, O. Oladeji, K. Ferryman, **D. Wijaya**, K. D. Hendricks-Muñoz, A. Ward, and E. O. Nsoesie, In *Journal of Paediatric and Perinatal Epidemiology, 2020*. Wiley [LINK](#)

Detecting Frames in News Headlines and Its Application to Analyzing News Framing Trends Surrounding U.S. Gun Violence, S. Liu, L. Guo, K. Mays, M. Betke and **D. Wijaya**, In *Proceedings of CoNLL, 2019*. ACL SIGNLL [LINK](#)

Detecting reports of unsafe foods in consumer product reviews, A. Maharana, K. Cai, J. Hellerstein, Y. Hswen, M. Munsell, V. Staneva, M. Verma, C. Vint, **D. Wijaya**, and E. Nsoesie, In *Journal of the American Medical Informatics Association (JAMIA) Open, 2019*. Oxford University Press [LINK](#)

Winter is here: Summarizing Twitter Streams related to Pre-Scheduled Events, A. Andy, D. Ippolito, **D. Wijaya** and C. Callison-Burch, In *Proceedings of the Storytelling Workshop, ACL, 2019*. ACL Workshop [LINK](#)

What makes gun violence a prominent issue? A computational analysis of compelling arguments and partisanship, L. Guo, K. Mays, Y. Zhang, **D. Wijaya**, M. Betke, In *Association for Education in Journalism and Mass Communication Conference, 2019*.

Learning Translations via Images: A Large Multilingual Dataset and Comprehensive Study, J. Hewitt, D. Ippolito, B. Callahan, R. Kriz, **D. Wijaya**, C. Callison-Burch, In *Proceedings of ACL, 2018*. ACL [LINK](#)

Never-Ending Learning, T. Mitchell, W. Cohen, E. Hruschka, P. Talukdar, B. Yang, J. Betteridge, A. Carlson, B. Dalvi, M. Gardner, B. Kisiel, J. Krishnamurthy, N. Lao, K. Mazaitis, T. Mohamed, N. Nakashole, E. Platanios, A. Ritter, M. Samadi, B. Settles, R. Wang, **D. Wijaya**, A. Gupta, X. Chen, A. Saparov, M. Greaves, and J. Welling, In *Communications of the ACM, 2018*. ACM [LINK](#)

Learning Translations via Matrix Completion, **D. Wijaya**, B. Callahan, J. Hewitt, J. Gao, X. Ling, M. Apidianaki, C. Callison-Burch, In *Proceedings of EMNLP, 2017*. ACL [LINK](#)

Mapping Verbs in Different Languages to Knowledge Base Relations using Web Text as Interlingua, **D. Wijaya** and T. Mitchell, In *Proceedings of NAACL-HLT, 2016*. ACL [LINK](#)

“A Spousal Relation Begins with a Deletion of engage and Ends with an Addition of Divorce”: Learning State Changing Verbs from Wikipedia Revision History, **D. Wijaya**, N. Nakashole, T. Mitchell, In *Proceedings of EMNLP, 2015*. ACL [LINK](#)

CTPs: Contextual Temporal Profiles for Time Scoping Facts via Entity State Change Detection, **D. Wijaya**, N. Nakashole, T. Mitchell, In *Proceedings of EMNLP, 2014*. ACL [LINK](#)

Mining and Organizing a Resource of State-changing Verbs, **D. Wijaya**, N. Nakashole, T. Mitchell, In *Proceedings of the 4th Automated Knowledge Base Construction (AKBC) Workshop, 2014*. [LINK](#)

PIDGIN: Ontology Alignment using Web Text as Interlingua, **D. Wijaya**, P. Talukdar, T. Mitchell, In *Proceedings of CIKM, 2013*. ACM [LINK](#)

- Acquiring Temporal Constraints between Relations, **D. Wijaya**, P. Talukdar, T. Mitchell, In *Proceedings of CIKM, 2012*. ACM [LINK](#)
- Coupled Temporal Scoping of Relational Facts, P. Talukdar, **D. Wijaya**, T. Mitchell, In *Proceedings of WSDM, 2012*. ACM [LINK](#)
- Clustering Vertices in Weighted Graphs, **D. Wijaya** and S. Bressan, *Graph Data Management: Techniques and Application*, pages 285–298, 2012.
- Understanding semantic change of words over centuries, **D. Wijaya** and R. Yeniterzi, In *Proceedings of the Workshop on Detecting and Exploiting Cultural diversity on the social web, CIKM, 2011*. ACM [LINK](#)
- Nut Case: What does it Mean?: Understanding Semantic Relationship between Nouns in Noun Compounds through Paraphrasing and Ranking the Paraphrases, **D. Wijaya** and P. Gianfortoni, In *Proceedings of the 1st Workshop on Search and Mining Entity-Relationship Data, CIKM, 2011*. ACM [LINK](#)
- Predicting classifier performance using data set descriptors and data mining ontology, **D. Wijaya**, A. Kalousis, M. Hilario, In *Proceedings of the 3rd Planning To Learn Workshop WS9, 2010*. [LINK](#)
- Ricochet: A family of Unconstrained Algorithms for Graph Clustering, **D. Wijaya** and S. Bressan, In *Proceedings of DASFAA, 2009*. Springer [LINK](#)
- A Random Walk on the Red Carpet: Rating Movies with User Reviews and Pagerank, **D. Wijaya** and S. Bressan, In *Proceedings of CIKM, 2008*. ACM [LINK](#)
- Journey to the Centre of the Star: Various Ways of Finding Star Centers in Star Clustering, **D. Wijaya** and S. Bressan, In *Proceedings of DEXA, 2007*. Springer [LINK](#)
- Hierarchical Clustering for POS Tagging of the Indonesian Language, **D. Wijaya** and S. Bressan, In *Proceedings of International Symposium on Natural Language Processing (SNLP), 2007*. [LINK](#)
- Clustering Web Documents using Co-citation, Coupling, Incoming, and Outgoing Hyperlinks: a Comparative Performance Analysis of Algorithms, **D. Wijaya** and S. Bressan, In *International Journal of Web Information Systems*, 2(2):69–76, 2006. [LINK](#)

TALKS

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- Artificial Intelligence and Machine Learning for Social Research**, Invited Talk at University of Brawijaya, Indonesia, 08/2020
- Natural Language Processing for Education**, Invited talk for IDN-U Education Task Force in collaboration with Indonesian Lecturers Association, 07/2020
- Media Framing**, Invited talk at Tufts University T-Tripods Institute for Data Science Launch, 01/2020
- AI for Governments and Industrial Revolution 4.0**, Invited talk at Indonesian National Single Window, Ministry of Finance, Indonesia, 01/2020
- Media Framing**, Invited talk at Brandeis University Computational Linguistics Seminar Series, 12/2009
- Multimodality and Natural Language Understanding**, Boston University Data Science Day 2019, 02/2019
- AI in Public Health Research**, Invited talk at the Health Research and Development Agency, Ministry of Health, Indonesia, 08/2019
- Application of AI in Government Offices**, Invited talk at the Directorate General of Budget Financing and Risk Management, Ministry of Finance, Indonesia, 08/2019
- AI for Building Smart Cities**, Invited talk at Padang Mayor’s Office, Indonesia, 08/2019
- Bilingual lexicon induction using related languages and images**, Boston University Open AI Research Day: Industry Open House, 10/2018

Learning Translations via Matrix Factorization, Invited talk at Amazon Machine Translation Workshop and Amazon Academic Research Awards (AARA) funder's review, 05/2017 [SLIDES](#)

Building Lexical Resources for NLP, Invited talk at Allen Institute for Artificial Intelligence, 05/2017. [SLIDES](#)

Learning Translations via Matrix Factorization, Invited talk at DARPA Low Resource for Emergent Incidents (LORELEI) event, 03/2017

NELL Knowledge Base of Verbs, Invited talk at DARPA Deep Exploration and Filtering of Text (DEFT) site visit, 05/2016. [SLIDES](#)

Events, Entities, and Text, Refereed presentation at Events in Language and Cognition Workshop, 03/2016. [POSTER](#)

Read the Web, CMU Three Minutes Thesis Competition Final, 02/2014. [CLIP](#)

PIDGIN: Ontology Alignment using Web Text as Interlingua, Invited talk at Google Scholars Retreat, 07/2013. [POSTER](#)

Computers that Learn: NELL Practical Applications in the Context of Indonesian Development, Invited talk at the 3rd Indonesia Focus Conference, 11/2012. [SLIDES](#)

The Macro Reading of Time, Refereed presentation at the Mid-Atlantic Student Colloquium on Speech, Language and Learning, 10/2012. [POSTER](#)

NELL and Discovery 2020, TED-x presentation at Fulbright Science and Technology Conference, 10/2012. [CLIP](#)

Acquiring Temporal Constraints between Relations, Invited presentation at CMU School of Computer Science: Graph Analytics Workshop, 09/2012. [POSTER](#)

Temporal Constraint Acquisition, Invited talk at Google Worldly Knowledge Talk, 02/2012. [SLIDES](#)

A Farmer's Hope, An article in the book "Echo of Awakening: Diary of Hopes from the Children of the Nation", in celebration of the 100th-year Indonesian National Awakening day, 2008. [ARTICLE](#)

MEDIA COVERAGE

Comparing How Media around the World Frames Coronavirus News, The Brink, 06/2020 [LINK](#)

Junior Faculty Recognized with Career Development Awards, BU Today, 09/2019 [LINK](#)

What If You Could Manage Information Overload?, The Brink, 11/2018 [LINK](#)

The Search for the Universal Translator, Penn Tech Review, Prateek Agarwal, 09/2017. [LINK](#)

NELL: a Machine that Continuously Reads, Learns, and Thinks by Itself., Global Scientist, 05/2014. [LINK](#)

Derry Wijaya, Indonesian Student and Fulbright Fellow, Voice of America, 07/2013. [LINK](#)

Aiming to Learn as We Do, a Machine Teaches Itself, The New York Times, Steve Lohr, 10/2010. [LINK](#)

TEACHING

Introduction to Natural Language Processing, Instructor, Boston University, Spring 2019, 2020

Towards Universal Natural Language Understanding, Instructor, Boston University, Fall 2018, 2019, 2020

Grammars and Lexicons, Teaching Assistant, Carnegie Mellon University, Fall 2015

Machine Learning, Teaching Assistant, Carnegie Mellon University, Fall 2012

ADVISING

Current Students

Yusuf Kocyigit, Ph.D. student, Fall 2020–
Isidora Tourni, Ph.D. student, Summer 2020–
Afra Feyza Akyurek, Ph.D. student, Fall 2019–
David Assefa Tofu, Ph.D. student, Fall 2019–
Siyang Li, Masters in CS student, Summer 2020–
Alexander Jones, Undergraduate Student, Summer 2020–
Nikzad Khani, Undergraduate Student, Spring 2020–

Past students

Yida Xin, Ph.D. student, Directed Study, Fall 2019
Wenxing Liu, Masters in AI student, Directed Study, Spring 2020
Shawn Lin, Masters in AI student, Directed Study, Spring 2020
Shijie Zhao, Masters in CS student, Summer 2019
Qiren Sun, Masters in MET CS student, Summer 2019
Hengchang Hu, Masters in Statistics student, Summer 2019
Ziang Leng, Undergraduate student, Directed Study, Spring, Fall 2019
Siyi Liu, Undergraduate student, UROP Fall 2019, Directed Study, Spring 2019
Kunlin Cai, Undergraduate student, Directed Study, Spring 2019
Jorge Nario, Undergraduate student, Directed Study, Spring 2019
Alex Duchnowski, BU Academy Senior Thesis, Fall 2019

OTHER AWARDS

2007	Google Global Community Scholarship, Grace Hopper Conference
2006–2008	Research Scholarships, National University of Singapore
2000–2004	University Scholars Program, National University of Singapore
2000–2004	Undergraduate Studies Scholarships, Singapore Computer Systems
1996–1999	ASEAN scholarships, Secondary School and Junior College

SERVICE

Program Committee: ACL, TACL, EMNLP, NAACL, AACL, CoNLL, AKBC, IJCAI
Facilitator, Research in NLP and Communications, Boston University Data Science Day 2020, 02/2020
Assist with Boston University Faculty Candidate Review in CS (AI) and Linguistics (CompLing) Spring 2020
Ph.D. Dissertation Committee: Jacob Harer, Vasili Ramanishka
Ph.D. Oral Examination Committee: Louis Jensen, Yida Xin, Peilun Dai, Hieu Kinh Le
Computational Natural Language Learning (CoNLL 2019), Session chair, 11/2019
Visiting Scholars at the School of Computer Science, University of Indonesia, 08/2019
Boston University Computer Science Ph.D. Admission Committee, Fall 2018–Spring 2019

OUTREACH

Coordinator of “[Explore CS Research Workshop](#)” at Boston University, sponsored by Google Research, open to undergraduate women from universities in and around Boston to encourage and support more women to pursue research careers in CS, Fall 2020
Research Advisor, AI4All at Boston University, one of eleven AI4ALL programs across North America dedicated to educating the next generation of AI thinkers and creating a diverse AI workforce, Summer 2020
Facilitator, New England IBM-WiML workshop for Women in Artificial Intelligence, 09/2019

PreHacks: TechTogether, “Meet with Boston University CS Faculty” Panelist, 03/2019

Co-founder and facilitator of “Kelas Coding”, a weekly workshop that introduces computer science and coding to kids and adults from lower-income immigrant families, 2017–2018

Mentor at Intel ISEF 2015, the world’s largest international pre-college science competition

Organizer of OurCS 2013 at Carnegie Mellon University, a research-focused workshop for female CS undergraduates

Mentor at Women in Technology Sharing Online (WitsOn), 2012

Facilitator of Creative TechNights (machine learning & NLP), a weekly program at Carnegie Mellon University that introduces middle school girls to computer science and technology in fun sessions, 2012

Tutor in PLRT Tutoring project, a workshop that conducts computer and English language training to Indonesian domestic workers in Singapore, 2006, 2009

Advisor at Institute of Technical Education’s Interact Club, a community outreach club, 2004–2006

Student Advisor at National University of Singapore Advisor Scheme, a program that helps first year students adjust to university life and course load, 2002–2003

Researcher at Women Study Center in State University of Malang in Indonesia, conducted research and developed proposal to improve the well-being and empowerment of women in the region. The proposal was awarded \$100k grant from the Asian Development Bank, 2003

LANGUAGES

Indonesian (native), English (fluent), Malay (fluent), Javanese (fluent)