Michiel de Jong | CV

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Education

- **University of Southern California**
  PhD Candidate (GPA 4.0) *2018-present*
- **Carnegie Mellon University**
  Visiting Student (GPA 4.0) *2017-2018*
- **Northwestern University**
  PhD Candidate Economics (GPA 4.0) *2014–2016*
- **University of Cambridge**
  MPhil in Economic Research, Diploma in Economics (distinction) *2012-2014*
- **Utrecht University**
  Joint Honours BSc in Mathematics and Physics (cum laude) *2007-2011*

Publications

- Zemlyanskiy, Y., Ainslie, J., de Jong, M., Pham, P., Eckstein, I., Sha, F. READTWICE: Reading Very Large Documents with Memories. NAACL, 2021
- de Jong, M., Zemlyanskiy, Y., Chan, A., Sha, F. R3L: Self-Supervised Relation Representation Learning by Reasoning over Language. Working Paper
- de Jong, Michiel, and Fei Sha. Neural Theorem Provers Do Not Learn Rules Without Exploration. arXiv preprint, 2019
- de Jong, M., Zhang, K., Rhodes, T., Roth, A., Schmucker, R., Zhou, C., Ferreira, S., Cartucho, J., Veloso, M. Towards a Robust Interactive and Learning Social Robot. AAMAS, 2018
- de Jong, Michiel. Conflict, Resources and Networks. Thesis. University of Cambridge, 2014.

Projects

- **University of Southern California**
  Shalab, Prof. Fei Sha *2018 - Present*
  Working on the development of neural models with stronger inductive bias to improve generalization performance and data efficiency. Research so far has focused on two areas: i) entity and relation-centric representation and question answering using text corpora as a virtual knowledge base, ii) neuro-symbolic models such as neural theorem provers. Work in Progress.
- **Carnegie Mellon University**
  Coral Research Group, Prof. Manuela Veloso *2017 - 2018*
  Substantially improved the language interaction capabilities for the Pepper humanoid robot, enabling it to communicate robustly under varying conditions and learn from experience. Integrated speech with vision and motion systems. Ensembled compact embedded speech system with Google Cloud Speech for a 15% increase in recognition accuracy. Implemented conditional random field semantic parser and learning algorithm to automatically improve speech recognition as the robot experiences more interactions. Used dependency trees of recognized speech as features to improve the accuracy of semantic parsing for robotics with very limited data.
- **Northwestern University**
  PhD Candidate Research *2015 - 2017*

Explored whether part of the slowdown in productivity over the last several decades could be due to worsening measurement error as a result of an increase in the severity of the new product bias in cost-of-living indices. In particular, I hypothesized that a decrease in marginal costs relative to fixed costs in the introduction of new products decreases the optimal price at which to introduce those products, which increases the magnitude of infra-marginal benefits not captured by cost-of-living indices. I argued that marginal costs have decreased in proportion to fixed costs due to the increasing importance of low-marginal cost goods such as software.

- **University of Cambridge**
  MPhil Thesis *2013-2014*
  Studied conflict and expansion in networks, investigating how the optimal starting location in a network depends on the nature of conflict. I showed that, as the advantage of resource superiority increases, it becomes more advantageous for agents to locate centrally in the network. Awarded the highest possible distinction, limited to work deemed publishable.
- **University of Cambridge**
  Research Assistant *2012 - 2014*
  Worked jointly on new research project studying conflict in networks and contributed to Attack, Defense and Contagion in Networks (Goyal and Vigier, 2014). Developed and proved theorems and programmed simulations in Python.
- **Utrecht University**
  Bachelor Thesis *2010-2011*
  Generalized Black-Scholes option pricing formula to a new class of derivatives.
- **Utrecht University**
  Junior Project *2008-2009*
  Extended Godel's second incompleteness theorem for specific arithmetic.

Work Experience

- **Tibra Capital** **London, UK**
  Trader *2011–2012*
  Simulated derivative pricing models to make markets on equity index options.
- **UBS Investment Bank** **London, UK**
  Summar Analyst, Currency Research *June 2011 – September 2011*
  Published a research report on efficacy of foreign exchange intervention and the relationship between foreign exchange intervention and central bank independence.
- **Barclays Capital** **London, UK**
  Summer Analyst, Investment Banking Division *June 2010 – September 2010*
  Conducted study on private equity transactions in the Netherlands.

Skills

- **Languages:** Native speaker of English and Dutch
- **Programming Languages:** Python, Java, Fortran
- **Frameworks:** Jax, Pytorch, Tensorflow, ROS