Alexander **Johansen**

Copenhagen · Denmark

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Interest

I'm interested in, and excited about, solving high impact problems with machine learning and computer science. In my work and research I have applied, and also contributed to, popular python frameworks for machine learning such as SciKit Learn, TensorFlow, Pytorch, OpenNMT, and Theano. These efforts have lead to publications, and business products for companies, in the fields of natural language processing (Q&A, Sentiment classification, Summarization, Machine Translation), Bioinformatics (Pretrained embeddings), and health technology (Wearables, CGM, Diabetes monitoring and classification). Recently, through my current role as a Ph.D. student in the Snyder lab at Stanford, I've expanded to extracting and analyzing data from wearable biomedical devices and fitness trackers. Beyond my individual contributions I enjoy building community around machine learning and I've supervised around 80 student projects leading to multiple papers.

Education

Stanford University
Stanford, California, USA

Ph.D. Computer Science — *Sep 2020 - now*

- **Advised by Professor Michael P. Snyder**
- **2020 Fulbright Scholar**

Technical University of Denmark
Kongens Lyngby, Denmark

M.Sc. Mathematical Modeling and Computation, GPA: 11.44/12.00 — *Sep 2014 - Dec 2016*

- **Nanyang Technological University**, Singapore — *Semester Abroad Fall 2015*
- **Honors program**, Supervised by Professor Ole Winther

Copenhagen Business School
Frederiksberg, Denmark

B.Sc. Business Administration and Information Systems, GPA: 10.70/12.00 — *Sep 2011 - Jun 2014*

- **Lincoln University**, Canterbury, New Zealand — *Semester Abroad Fall 2013*

Experience

Ocean.io
Copenhagen, Denmark

Head of Data Science Research — *Feb 2020 - est. Sep 2020*

Developed a machine translation algorithm.

Technical University of Denmark
Kongens Lyngby, Denmark

Research Project Manager — *Jan 2019 - Jan 2020*

Supervised and conducted research with +30 students on machine learning methodology and applying deep learning to proteomics.

Salesforce
Palo Alto, California, USA

Deep Learning Research, Intern — *Jan 2017 - Jan 2018*

Research on deep learning for natural language processing, supervised by Richard Socher, PhD.

Teaching

Stanford University
Co-Supervisor

Research Course supervision — *2020-2022*

Supervised 4 High School interns, 1 Undergraduate intern

Technical University of Denmark
Head TA, course responsible

Deep Learning, Intro Reinforcement Learning, Deep Reinforcement Learning — *2016-2019*

Significant course material contributions (Deep Learning). Course responsible (Reinforcement Learning).

Co-Supervisor

Master Thesis and Research Course supervision — *2019-2021*

Supervised 13 M.Sc. Thesis' and 11 research course projects

Community

Deep Learning Copenhagen

MeetUp

Lead Organizer

Nov. 2018 - Dec. 2019

Inspired by Stanford's public poster exam in CS224N in 2017 I convinced Professor Ole Winther to do the same for our 02456 Deep Learning course. With student posters, company sponsored first prize, drinks, and pizza. Given the positive feedback, I was hired by the university, started a research lab for students, and kept hosting events to celebrate the students projects. This was a lot of fun and resulted in seven events, +1.5k participants, and multiple company sponsorships. (Event page: `meetup.com/Deep-Learning-DTU/`).

Community research

Online

Lead Organizer

Jan. 2020 - now

I help independent researchers who wants to pursue graduate studies and provide free supervision and problem statements to help them publish papers and get recognized. This brings me much joy, and five of my previous students are now pursuing PhDs.

Open Source

Google TensorFlow

contrib.seq2seq: #4761, #4686, #4382

TensorFlow tutorial (2k stars): `github.com/alrojo/tensorflow-tutorial`

Academic Reviews

2022	**NeurIPS**, Neural Information Processing Systems	*Reviewer*
2020-23	**ICLR**, International Conference on Learning Representations	*Reviewer*
2021-22	**Bioinformatics**,	*Reviewer*
2020	**ACL**, Association for Computational Linguistics	*Reviewer*
2020-21	**AAAI**, Association for the advancement of artificial intelligence	*Reviewer*
2018-20	**CoNLL**, Computational Natural Language Learning	*Reviewer*

Publications

2022	**Nucleic Acids Research**, *DeepLoc 2.0: multi-label subcellular localization prediction using protein language models.* V. Thumuluri, J. Armenteros, A. Johansen, H. Nielsen, O. Winther	*Journal*
2022	**Nature Biotechnology**, *SignalP 6.0 achieves signal peptide prediction across all types using protein language models.* F. Teufel, J. Armenteros, A. Johansen, M. Gíslason, S. Pihl, K. Tsirigos, O. Winther, S. Brunak, G. Heijne, H. Nielsen	*Journal*
2021	**Bioinformatics**, *NetSolP: predicting protein solubility in E. coli using language models.* V. Thumuluri, H. Martiny, J. Armenteros, J. Salomon, H. Nielsen, A. Johansen	*Journal*
2021	**Computational Biology and Chemistry**, *Deep protein representations enable recombinant protein expression prediction.* H. Martiny, J. Armenteros, A. Johansen, J. Salomon, H. Nielsen	*Journal*
2020	**Current Research in Biotechnology**, *Prediction of GPI-Anchored proteins with pointer neural networks.* M. Gíslason, H. Nielsen, J. Armenteros, A. Johansen	*Journal*
2020	**IEEE EMBC**, *Short term blood glucose prediction based on continuous glucose monitoring data.* A. Mohebbi, A. Johansen, N. Hansen, P. Christensen, J. Tarp, M. Jensen, H. Bengtsson, M. Mørup	*Poster*
2020	**ICLR**, *Neural arithmetic units.* A. Madsen, A. Johansen	*Spotlight*
2017	**Bioninformatics**, *An introduction to deep learning on biological sequence data: examples and solutions.* V. Jurtz, A. Johansen, M. Nielsen, J. Armenteros, H. Nielsen, C. Sønderby, O. Winther, S. Sønderby	*Journal*
2017	**ACM BCB**, *Deep recurrent conditional random field for protein secondary structure prediction.* A. Johansen, C. Sønderby, S. Sønderby, O. Winther	*Oral*
2017	**IEEE EMBC**, *A deep learning approach to adherence detection for type 2 diabetics.* A. Mohebbi, T. Aradóttir, A. Johansen, H. Bengtsson, M. Fraccaro, M. Mørup	*Poster*
2016	**IEEE ASSP**, *Epileptiform spike detection via convolutional neural networks.* A. Johansen, J. Jin, T. Maszczyk, J. Dauwels, S. Cash, M. Westover	*Poster*

Patents

2017	**US Patent App. 15/853,530**, *Probability-Based Guider.* A. Johansen, B. McCann, J. Bradbury, R. Socher	*Pending*
2022	**US Patent 11250311**, *Deep Neural Network-Based Decision Network.* A. Johansen, B. McCann, J. Bradbury, R. Socher	*Approved*