Alexander Bock

Somerville, MA

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EDUCATION

Bachelor of Science | *Computer Science, Biology*   September 2015 – May 2019

Tufts University   Medford, Massachusetts

WORK EXPERIENCE

Machine Learning Operations Engineer   November 2021 – present

Generate Biomedicines   Cambridge, Massachusetts

- Build and maintain scalable data transformation and modeling pipelines for proteomic sequence data
- Design user interfaces for ML researchers and immunologists to analyze pipeline outputs
- Automate deployment routines for pipelines capable of processing up to 1 billion sequences

Research Programmer   July 2019 – October 2021

Boston Fusion   Lexington, Massachusetts

- Developed customized data analysis and machine learning pipelines for R+D efforts
- Presented approaches and results to customers regularly across project life cycle
- Delivered software prototypes to scientists on large-scale projects with DARPA and ONR
- Deployed and lead Agile development methodology for interdisciplinary teams of 10-20 people

Research Intern   June 2017 – May 2019

Tufts University School of Engineering   Medford, Massachusetts

- Developed C++ agent-based model simulation of an area coverage task to measure performance in a high-dimensional parameter space
- Developed Python pipeline to infer and classify sentiment in human conversations using NLP techniques (text processing, topic modeling)
- Interfaced with graduate students to translate hypotheses into technical prototypes and summarize results in publications

PROJECTS

Proteomic analysis with topic modeling   Spring 2019

Tufts University | github.com/alex-bock/enzyme_FP_LDA

Protein functional determiner   Fall 2018

Tufts University | github.com/aidy80/Protein-Functional-Determinator

PUBLICATIONS   ORCID: [0000-0003-1870-8499](https://orcid.org/0000-0003-1870-8499)

An NLP approach to quantify dynamic salience of predefined topics in a text corpus

2021 | Bock et al. | SBP-BRiMS

AI-augmented human performance evaluation for automated training decision support

2021 | Palladino et al. | 4th International Conference on Intelligent Human Systems Integration

Using topic modeling to infer the emotional state of people living with Parkinson's disease

2019 | Valenti et al. | Assistive Technology

Inferring emotional state from word semantics and conversational topics

2019 | Valenti et al. | International Conference on Autonomous Agents and Multiagent Systems (AAMAS)

Comparison of simple agent capabilities for an online area coverage task

2018 | Buckingham et al. | IEEE Symposium Series on Computational Intelligence (SSCI)

Honors and Awards

De Florez Prize in Human Engineering April 2019

Recognition for human factors engineering research at Tufts University

Neubauer Scholar September 2015 - May 2019

Grant for undergraduate students to pursue independent research efforts

Skills

Programming Python, C++, MATLAB, SQL

Tools *Infrastructure*: AWS, Prefect, Docker, Kafka, ArangoDB, MongoDB; *Python*: NumPy, SciPy, Pandas, scikit-learn, matplotlib, Gensim, pytest

Development + documentation Agile/Scrum (certified Scrum master), Git, Bitbucket, Jira