Alexander Bock

Somerville, MA

(603) 593-2539 | alex.bock125@gmail.com

EDUCATION

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

Tufts University　　　　　　　　　　　　　　　　　　　　　　　　　　　Medford, MA

WORK EXPERIENCE

Software Engineer/Research Programmer　　　　　　　　　　　　July 2019 – present

Boston Fusion　　　　　　　　　　　　　　　　　　　　　　　　　　　Lexington, MA

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

Research Intern　　　　　　　　　　　　　　　　　　　　　　　　June 2017 – May 2019

Tufts University School of Engineering　　　　　　　　　　　　　　　　Medford, MA

- 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 | *Python*　　　　　　　　　Spring 2019

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

Protein functional determiner | *Python*　　　　　　　　　　　　　Fall 2018

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

PUBLICATIONS

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

2021 | Bock et al. | SBP-BRiMS 2021

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

Comparison of simple agent capabilities for an online area coverage task

2018 | Buckingham et al. | 2018 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: Docker, Kafka, ArangoDB, MongoDB; Python: NumPy, SciPy, Pandas, scikit-learn, matplotlib, Gensim, pytest

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