Burak **Aksar**

PH.D. STUDENT · COMPUTER ENGINEERING

8 Saint Mary's St. PHO 340 Boston, MA, 02215

(+1) 617-3193745 | baksar@bu.edu | www.burakaksar.com | aksarburak | burakaksar

Research Interests: Applied Machine Learning, Explainability & Fairness in AI, Monitoring and Management of Large-Scale Systems, High-Performance Computing

Education

Boston University — *Boston,USA*

PH.D. IN ELECTRICAL AND COMPUTER ENGINEERING — *Sept. 2018 - Present*

- **Coursework:**Machine Learning, Deep Learning, Learning from Data, Operating Systems, Cybersecurity, Advanced Data Structures, Enterprise Client/Server Software, Embedded Systems

Sabanci University — *Istanbul,Turkey*

BACHELORS OF SCIENCE IN ELECTRONICS ENGINEERING — *Sept. 2013 - June 2018*

- **CGPA:** 3.86 / 4.0 , top 1%
- **High Honor Scholarship:** Scholarship meets the 100% of the tuition fee and provides monthly stipend.

Research Experience

Explainability and Fairness in AI — *Supervisor: Ayse Coskun*

PEACLAB & SANDIA NATIONAL LABS — *June 2019 - Present*

Researching on model-agnostic, example based explainability techniques for time series classification and forecasting models

Automated Monitoring and Analytics of Large-Scale Production Data Centers — *Supervisor: Ayse Coskun*

PEACLAB & SANDIA NATIONAL LABS — *Sept. 2018 - Present*

Developing deep learning based frameworks to automate High Performance Computing (HPC) systems' performance analytics and improve security such as application detection and performance anomaly diagnosis

Internships

Sandia National Laboratories — *Albuquerque, NM, USA*

MACHINE LEARNING RESEARCH INTERN — *May 2019 - Sept. 2019*

- Explored hardware & software level performance variations in HPC systems
- Developed LSTM-based machine learning model to forecast time-series based performance metrics in HPC production systems

Publications

[1] **B. Aksar**, B. Schwaller, O. Aaziz, E. Ates, J. Brandt, V.J. Leung, M. Egele, A.K. Coskun, "A Machine Learning Approach to Understanding HPC Application Performance Variation" in *Int. Conf. for HPC, Networking, Storage and Analysis* (SC), Denver, 2019.

[2] E. Ates, Y. Zhang, **B. Aksar**, J. Brandt, V.J. Leung, M. Egele, A.K. Coskun, "HPAS: An HPC Performance Anomaly Suite for Reproducing Performance Variations" in *Int. Conf. on Parallel Processing* (ICPP), Kyoto, 2019

Skills

Programming Languages C/C++, Python, R, Java, Bash, MATLAB, HTML, CSS, Javascript, Angular, SQL

Environment & Tools MPI, scikit-learn, Tensorflow, PyTorch, LDMS, AWS

Honors & Awards

2019	**Student Volunteer Fellowship** Int. Conf. for HPC, Networking, Storage and Analysis (SC)	*Denver, U.S.A*
2019	**Richard Newton Young Student Fellowship** Design and Automation Conference (DAC)	*Las Vegas, U.S.A*
2018	**Distinguished Computer Engineering Fellowship** Boston University	*Boston, U.S.A*
2018	**Fulbright Ph.D. Scholarship Grantee**	*Ankara, Turkey*
2014-17	**Dean's High Honor List** Sabanci University	*Istanbul, Turkey*
2013-18	**Sabanci University High Honor Scholarship** Sabanci University	*Istanbul, Turkey*