İsmail Ulutürk

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EDUCATION

University of South Florida, Tampa, Florida, USA
- PhD Candidate in Electrical Engineering — Apr 2017 – May 2020 (Expected)
- MSEE in Electrical Engineering — Jan 2013 – Dec 2017

Istanbul Technical University, Istanbul, Turkey
- B.S. in Electrical Engineering — Sep 2008 – Jun 2012

SELECT PUBLICATIONS

[J1] Varol, O., & Uluturk, I. (2019). **Journalists on Twitter: Self-branding, Audiences, and Involvement of Bots.** *Journal of Computational Social Science*.

RESEARCH PROJECTS

Collaborative Trajectory Control for Aerial Networks: Multi-agent trajectory control of UAV based access points to implement a flexible aerial Radio Access Network (RAN) that can be rapidly deployed in previously unknown environments, utilizing Network Science and Reinforcement Learning.

Social Bots on Twitter: Studying the implications for the significant existence of social bots on Twitter, with a focus on bot detection and data science approaches. Developing open-sourced data collection tools. Conducting a validation study on publicly available bot detection tools.

Study on Social Integration of Refugees in Turkey: Using an uncleaned 1.95GB Call Detail Record (CDR) dataset from 50k users, I have constructed mobility networks based on a variable high-order network topology in Python, and identified distinct markers for spatial segregation of refugees.

WORK EXPERIENCE

Borda Technology, Tampa, Florida, USA & Istanbul, Turkey
Senior Hardware R&D Engineer — Jan 2013 – Oct 2018
- Designed, troubleshot, and validated all the circuitry, from concept to production, for 6 mass-produced devices in the market, including the entire Active RFID product range.
- Worked together with respective coworkers to oversee mass production, develop test tools for production, improve enclosure and UX design, and develop in-house quick prototyping options.
- Led EM and regulatory compliance efforts. Held internal lectures and trained interns on EMC concepts.

Borda Technology, Istanbul, Turkey
Hardware R&D Engineer — Sep 2010 – Jan 2013
- Wrote embedded software in C for multiple MCU platforms, both on bare metal and with an RTOS.

SKILLS

Computing
- Frequent user of Python and its ecosystem for research, simulations, and data analysis.
  - Jupyter, scikit-learn, NetworkX, NumPy, pandas, Matplotlib, TensorFlow, Keras, etc.
- Experienced in C, MATLAB, Git, LaTeX, Embedded Software, and Web Development basics.
- Familiar with SQL, GNU/Linux systems, and shared high-performance computing platforms.

Academic
- Machine Learning, Reinforcement Learning, Network Science, Statistical Inference

RECENT SOFTWARE PROJECTS

content-annotator: A highly configurable and extendable browser extension that greatly simplifies manual annotation of users and content on social media sites. Work in progress, soon to be open-sourced.

gently-multiagent: A Multi-agent Aerial Vehicular Network simulator written in Python, used for my dissertation research, with an OpenAI gym environment. Work in progress, soon to be open-sourced.

CLASS PROJECTS

Detection of Social Bots on Twitter: I have built a working social bot detector with a mean AUC of 0.84 using Twitter API, public Honeypot data, Random Forest classifiers, and engineered features, using Python.

Analysis of Zika Fever Epidemic in Colombia: I have identified that simple diffusion based epidemic models were lacking due to the spreading mechanisms of Zika, and constructed a Small-World Network using land and air transportation networks to explain the spread within the country using Python.

Wastewater Treatment Plant Aerator Fan Control: Using real data from a plant in Valrico, Florida and M5P Regression Trees we achieved a correlation coefficient of 0.927 with control signal from a real expert.