Jamshidbek **Mirzakhalov**

Undergraduate Researcher | Software Engineering Intern

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Education

University of South Florida *Tampa, Florida*

B.S. in Computer Science | Honors College | Major GPA: **3.94** *Aug 2016 - May 2020*

- **Research Interests:** Natural Language Processing, Machine Learning, Mobile Computing, and as well as their application to Education and Human-Computer Interaction
- **Coursework:** Natural Language Processing, Automata Theory and Formal Languages, Software Engineering Principles, Brain Computer Interfaces, Database Design, Analysis of Algorithms, Intro to Discrete Structures

Publications

1. Dey, A. K., **Mirzakhalov, J.**, Chellappan, S. (2019). Integrating Wearable Sensing, Smartphone Apps and Machine Learning to Design a Home-based Personalized Secondary Prevention System for Women with Heart Diseases (In preparation)
2. **Mirzakhalov, J.**, Babu, A., Andujar, M. (2019). Mudpoint: Evaluating Instructor Perception on a Continuous and Non-Specific Feedback System (Accepted to appear in HCI International 2020.)
3. Minakshi, M., Bharti, P., McClinton, W., **Mirzakhalov, J.**, Carney, Ryan M., and Chellappan, S. (2019). A Deep Learning Framework to Automatically Identify Genus and Species of Mosquitoes from Smartphone Images. (Submitted to IEEE Transactions on Mobile Computing.)

Patents

1. A Deep Learning Framework to Automatically Identify Genus and Species of Mosquitoes from Smart-phone Images. (USF Ref. 18B171PR Chellappan)

Research Experience

IBM Research (Dr. Rong Chang) *Yorktown, NY*

Research Intern *May 2019 - Aug 2019*

- Automated the deployment of AML and time-series prediction models to cloud environment using Docker and Kubernetes
- Prototyped a general-purpose framework for service deployment to reduce the cloud migration time for researchers
- Developed several notification services as a part of automating REST API service request fulfillments using Firebase, Twilio, SendGrid APIs and libraries.

USF Social Computing Lab (Dr. Sriram Chellappan) *Tampa, FL*

Undergraduate Researcher *Jan 2018 - present*

- Explored the use of Transfer Learning for topic classification from classroom audios on different word embedding variants (word2vec, GloVe, FastText, BERT etc)
- Worked on a team of 3 to develop a deep learning model for mosquito genus and species classification
- Designed an intervention system integrating smartphones, wearables and Machine Learning to prevent the stroke relapse in elderly women
- Developed a mobile and web platform for a team of social scientists for anonymous and qualitative metadata extraction from user phones

USF Neuro-Machine Interaction Lab (Dr. Marvin Andujar) *Tampa, FL*

Undergraduate Researcher *Jan 2018 - Oct 2018*

- Investigated the use of BCI devices as a mode of control in e-sports with the goal of increasing accessibility in gaming for people with physical disabilities
- Worked on a team of 3 on developing a Brain-Drone racing simulation by integrating BCI devices (i.e. Muse, Emotiv) into a Unity environment
- Developed a movement engine for the drone character in C# to navigate through different routes in the game arena

Skills

Languages Java, Python, C++, JavaScript

Tools Android Studio, React Native, Unity, Flask, Tomcat, Kubernetes, Docker, Git, REST

Libraries NLTK, PyTorch, Keras, Tensorflow, OpenCV, GCP

Honors & Awards

2019	**Category Award**, HackGT 6 at Georgia Institute of Technology	*Atlanta, GA*
2019	**Category Award**, PennApps XX at Univ. of Pennsylvania	*Philadelphia, PA*
2019	**2nd Place**, Hackabull 2019 at Univ. of South Florida	*Tampa, FL*
2019	**1st Place**, KnightHacks 2019 at Univ. of Central Florida	*Orlando, FL*
2019	**Award**, Dean's List of Scholars (x4)	*Tampa. FL*
2019	**Scholarship**, USF Chair's Scholarship ($500)	*Tampa, FL*
2019	**Scholarship**, Honors Community Engagement Scholarship ($600)	*Tampa, FL*
2018	**Category Award**, CalHacks 5.0 at UC Berkeley	*Berkeley, CA*
2018	**Category Award**, MHacks X at Univ. of Michigan	*Ann Arbor, MI*
2016	**Scholarship**, USF Green & Gold Presidential Scholarship ($48,000)	*Tampa, FL*

Projects

Coup.ai
Tampa, FL

Personal Project — *September 2019*

- Developed a command-line game bot for a popular multi-player board game *Coup: The Dystopian Universe* using Python and Pytorch
- Trained a bot using deep neural networks to learn the best strategies (i.e. attack, bluff, steal) in the game through self-playing

Classroom.ai
Orlando, FL

KnightHacks 2019 — *March 2019*

- Developed a mobile platform for students to provide anonymous and qualitative feedback to instructors about their confidence/confusion of the class material in real-time
- Trained a K-nearest neighbor (k-NN) classifier to automatically detect confusion levels in students by their postures and facial expressions
- Awarded **1st Place** at KnightHacks 2019

MosquitoTag
Tampa, FL

USF Social Computing Lab — *Jan 2018 - present*

- Developed a cross-platform mobile application with server-side deep learning models to classify species and genus of disease-spreading mosquitoes
- A **utility patent** has also been filed by University of South Florida (see above)

Presentations & Demos

2019	**USF Undergraduate Research Colloquium**, "Citizen Epidemiology: Enabling Citizens to Automatically Classify Genus and Species of Mosquitoes from Smartphone Images via Deep Learning"	*Tampa, FL*
2018	**Orlando-IX**, "USF Neuro-Machine Interaction Brain Drone Racing Simulation Demo"	*Orlando, FL*

Community Engagement

Society of Competitive Programmers
Tampa, FL

Co-Founder & President — *Jan 2018 - Dec 2019*

- Student organization that helps to foster hackathon culture at USF and supports students in their hackathon trips around the nation
- Helped USF improve in annual Major League Hacking (MLH) rankings from 117th to 44th in the nation in a span of 2 years
- Reached over 350 active members and enabled more than 150 students experience their first hackathons
- Acquired over $20k in funding for student travel through industry partnerships

USF Engineering EXPO
Tampa, FL

Volunteer Director & Exhibitor — *April 2018 - Feb 2019*

- Worked with a committee of 30 students to collaborate on a two-day event organized for over 10,000 K-12 kids interested in STEM fields
- Lead a team of over 200 student volunteers by distributing tasks, assigning daily goals, scheduling, and event set up/break down

USF Honors College
Tampa, FL

Honors Orientation Leader — *May 2017 - August 2017*

- Welcomed incoming engineering students to USF Honors College by organizing tours, info sessions and one-on-one meetings
- Assisted students with class registration by navigating through the system, answering questions and connecting them to academic advisors