Tan Gemicioglu

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Education

Georgia Institute of Technology – Atlanta, GA — Aug *2019 – Dec 2022*

B.S. in Computer Science, Intelligence & People concentration — GPA: 3.87 / 4.0

Robert College – Istanbul, Turkey — *Sep 2014 – May 2019*

Research Experience

Georgia Tech Contextual Computing Group – Undergraduate Research Assistant — *Jan 2020 – Present*

- Working with wearable computing pioneer Thad Starner to design smarter, more usable wearable interfaces
- Coordinating projects between students and industry on HCI research for neural communication and haptics

Northeastern University Center for Robotics – Research Assistant — Jul *2018 – Aug 2018*

- Created interfaces and wrappers for the ROS navigation, localization and mapping packages in Python
- Assisted in speeding up research on deep reinforcement learning using POMDPs for mobile manipulators

Bogazici University AILAB – Research Intern — Jun *2017 – Aug 2017*

- Built and designed robot eyes with animated graphics using Blender, OpenGL and ROS on Raspberry Pi
- Applied HRI research to increase likability of a social robot by generating humanlike facial expressions

Industry Experience

Oracle Analytics Cloud – Software Engineer Intern — *May 2021 – Aug 2021*

- Improved UX and designed interactive data visualizations for big data service using Typescript and Oracle JET
- Integrated a highly-requested plugin adding dynamic animated displays into product with 1 million users

Oracle Corporate Architecture – Software Engineer Intern — *May 2020 – Aug 2020*

- Contributed to MVP of prototype standalone console for WebLogic Server using Docker, Helidon and Knockout
- Designed user help system and fixed UI bugs for REST-based web app to be launched to 7000+ customers

Mifos Initiative – Open Source Volunteer — Jan *2017 – May 2019*

- Solved critical bugs impacting customers' daily operations, improved stability in Javascript, Spring, MySQL
- Teamed up with hundreds of volunteers on frontend, backend of finance platform reaching 20 million clients

Projects

BrainBraille — *May 2021 – Present*

- Designing a novel brain-computer interface translating muscle tension to language from local motor activity
- Processing fNIRS signals with machine learning to enable communication for people with motor disabilities

Passive Haptic Learning — *May 2021 – Present*

- Studying passive learning with vibrotactile haptic feedback gloves for teaching how to play the piano
- Designing hardware for wireless wearable haptic glove, user-facing website and organizing user studies

AI Through Symbiosis — *Nov 2020 – Present*

- Researching unsupervised object recognition with head-worn displays for augmented reality applications
- Experimenting with multitude of algorithms in machine learning, computer vision and speech recognition

SilentSpeller — *Jan 2020 – Present*

- Investigating electropalatographic wearable devices as silent speech interfaces using HTK, Sklearn and Bash
- Achieved 97% accuracy using NLP techniques and made silent, hands-free text entry system as fast as typing

Localization of Working Memory using tfMRI — *Jul 2021 – Aug 2021*

- Analyzed fMRI time series data from Human Connectome Project with GLMs to find working memory activity
- Located relevant brain functional networks, compared activity across stimuli in global student collaboration

DJI RoboMaster AI Challenge — Dec 2017 – May *2018*

- Optimized path planning and trained LSTM recurrent neural networks for an autonomous mobile robot
- Competed with 100 teams, demonstrated potential of reinforcement learning with a custom simulation

Humanitarian Robotics & Automation Technologies Competition — Nov 2016 – May *2017*

- Developed decision tree for autonomous mine detection with mobile robots in Python, Scikit-learn
- Empowered humanitarian demining by improving sensory capabilities of affordable and efficient robots

Publications

Naoki Kimura, **Tan Gemicioglu**, Jonathan Womack, Richard Li, Yuhui Zhao, Abdelkareem Bedri, Alex Olwal, Jun Rekimoto, and Thad Starner. "Mobile, Hands-free, Silent Speech Texting Using SilentSpeller." Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems. ACM, 2021.

Leadership

RoboJackets

Vice President *Apr 2021 – Present*

- Directing GT's premier robotics organization consisting of 300 students competing in multitude of competitions
- Ensuring communication between core leadership, alumni and teams, assisting managers in achieving goals

Project Manager *Apr 2020 – Apr 2021*

- Led multidisciplinary team of 60+ students in building robot to autonomously navigate open grassy terrain
- Organized team through the pandemic, managed a $10,000 budget and pioneered plan for new competition

Georgia Tech OMSCS – Teaching Assistant *Jan 2021 – May 2021*

- Created content for CS6601: Artificial Intelligence in Georgia Tech's Online Master's degree program
- Wrote an assignment to help students learn how to use and improve Hidden Markov Models using HTK

FIRST Robotics Competition, ARC 6014 – Vice Captain and Software Lead *Sep 2016 – May 2019*

- Won 6 awards internationally, qualified for championships twice by coordinating team of 30 students
- Taught new members, organized code structure and created software workflows in Java using Git and Gradle

Honors and Awards

Georgia Tech President's Undergraduate Research Award	*Aug 2021*
UROP Undergraduate Research Symposium Outstanding Oral Presentation Award	*Apr 2021*
Sait Halman Award for Excellence in Computer Science	*Jun 2019*
Bronze Medal in the Turkish National Olympiad in Informatics	*Nov 2018*
ICRA 2018 DJI RoboMasters AI Challenge Finalist	May 2018
ICRA 2017 Humanitarian Robotics & Automation Technologies Competition Finalist	May 2017
Google Code-in Finalist for the Mifos Initiative	*Feb 2016*
Google Code-in Finalist for RTEMS	*Feb 2015*

Skills

Languages: Python, C, C++, Java, MATLAB, R, Bash, JavaScript, SQL, HTML, LaTeX
Frameworks: Pytorch, Sklearn, Tensorflow, Kaldi, HTK, ROS, Spring, React, Node.js, Android SDK, Unity
Software: Linux, Git, Docker, Maven, Gradle, OpenCV, Gazebo, Microsoft Azure, Doxygen
Prototyping: PCB design, surface mount soldering, 3D printing, laser cutting, KiCAD, Autodesk Inventor