Tarek Bsat

Ann Arbor, MI • tbsat@umich.edu • (734) 276-3558

Education

The University of Michigan | College of Engineering Ann Arbor, MI
B.S.E. in Computer Science Engineering *Junior Standing*
B.S.E in Industrial and Operations Engineering
- GPA: **3.82**

Coursework: Data structures, Algorithms, Database Management Systems, Data Processing, Optimization Methods, Markov Processes, Linear Algebra, Discrete Math, Statistical Methods

Skills

Programming: C++, C, Python, Gurobi, R, MatLab, Access, SQL, HTML (familiar), CSS (familiar)

Languages: French (Native), Arabic (Native), English (Fluent), Spanish (limited proficiency)

Extracurricular: Regent of Upsilon Beta Theta Tau Professional Engineering Fraternity, APM honor society for Industrial Engineers

Work Experience

Center for Healthcare Engineering and Patient Safety (CHEPS) Ann Arbor, MI
Healthcare Optimization Analyst *September 2019 - Present*
- Implementing and developing a non-linear program with +2M constraints using C++ to optimize year-long residency block schedules of 300+ residents at the University of Michigan Hospital
- Performing simulation using C++ to evaluate policies for scheduling specialty care appointments to accommodate patient preference, of over 3,000 patients at the University of Michigan Hospital
- Managing version control of various source code and validating simulation components and their accuracy

Department of Industrial and Operations Engineering, University of Michigan Ann Arbor, MI
Research Assistant *June 2019 - December 2019*
- Replaced the Sample Average Algorithm with a Greedy Algorithm to reduce the solution time with large sample sizes by an exponential factor
- Managed the implementation of the greedy algorithm and introduced Gurobi Optimization to a team of 4 researchers
- Minimized the makespan on unrelated and stochastic machines by a factor of 20%

Projects

Harvey Ann Arbor, MI
Co-Founder and developer *Fall 2018*
- Service to be used by the government and organizations for real-time feedback during natural disasters
- Winner at MHacks 11, best use of MongoDB
- Carried out the idea using different services ranging from MongoDB, Twilio and Uber's kepler.gl

Dino Dodge Ann Arbor, MI
Founder and developer *Fall 2018*
- Designed the game using GameMaker 2, with the purpose of serving the community and the visually impaired specifically
- Implemented the algorithm for the dinosaur's chasing, designed the 10+ levels and worked on graphics
- Rated top game from a group of 100+ students at a local high school, out of a group of 12+ games

Leadership

Michigan International Student Society Ann Arbor, MI
Vice President of Finance - Past Professional Development Chair *August 2019 - Present*
- Prepare yearly budget, collect dues and report financial information of the club
- Seeked to provide seminars, workshop and other professional development opportunities for the chapter membership `

Interact Club of Saida Saida, Lebanon
Consultant - Past President *June 2017 - Present*
- Managed over $6,000 in fundraising to renovate a public school in Saida
- Acquired and donated $4,000 worth of visual learning and teaching tools to the Ahmad Jawhari Center for Autism

Awards and Certificates

- Winner at **MHacks XI** at the University of Michigan (Best use of MongoDB)
- William J. Branstrom Freshman Prize awarded to top 5% Freshmen Students
- Engineering Dean's Honor List
- Top 10 Math Olympiad (Middle East and Indian Peninsula)
- Winner at Budding Ambassador 2017 (Middle East and Indian Peninsula)