Alexander Sotnikov

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LinkedIn
Github
Personal Website

SKILLS

Programming:	Java, Python, HTML, CSS, Markdown, C++, C, Javascript, ReactJS, NodeJS MATLAB, Assembly, LATEX, GIT, Object Oriented Programming
Hardware:	Raspberry Pi, Arduino, STM32
Soft Skills:	Leadership, Initiative, Communication, Teamwork, Organization
Design Environments:	Vercel, Eclipse IDE, AutoCad, Canva, Microsoft Office Suite, Github

EXPERIENCE

Guidance Navigation Communications Engineer Sept 2024 - Present
UW Orbital Design Team

- Accurately simulated how angular momentum built up in the satellite reaction wheels, using iterative **attitude matrices**, modeled in **MATLAB**.
- **Tested** momentum dumping mechanisms, such as magnetorquers and satellite thrusters, producing **10 highly accurate simulations** in **Simulink**, that modeled all possible edge cases.

Robotics Programmer Sept 2022 - Jan 2024
VEX Robotics Team

- Successfully programmed crucial sections of the robots **drive train** using the language, **VEX**, allowing the team to successfully complete all mobility related challenges **50% faster then expected**, during the competition.

Founder and President Sept 2020 - June 2024
AY. Jackson Chess Club/Community

- **Founded** the chess club and grew it into an online community of more then **100 members**.
- **Led** a **team** of 10 volunteers in organizing weekly tournaments attended by **30+ people**, employing techniques such as **mail merge** and advertising campaigns to boost player turnout.

Volunteer Assistant Instructor Sept 2021 - Sept 2022
Myungs Taekwondo Thornhill

- Assisted in implementing lessons, by **teaching** groups of up to **25** students, kicks and poomsae techniques.

PROJECTS

CelestiaTrack - Python, Git, C++

- Using API written in **Python**, efficiently extracted and decoded precise ephemeris databases, with more then **1 million entries**, about various planets from **JPL's Horizons System**, allowing my **team** to create an accurate **Dynamic 3D Orrery model** of our Solar System. Project built for **NASA Space Apps Hackathon**.

Physics Club Website - Vercel, ReactJS, Javascript, HTML, CSS, EmailJS

- Used **ReactJS**, **HTML**, and **CSS**, to create an interactive website for the schools physics club; besides club information, also included an embedded **sign up form** which facilitated **a 200% membership increase**.
- Creatively employed **EmailJS**, a **back-end** service which allowed me to create a responsive form that efficiently passed more then **90 user feedback/queries** straight into the clubs email inbox.

Calculator Arduino Project - Arduino, C, Tinkercad

- Designed a prototype of a working calculator in **Tinkercad**, which employed an **Arduino** to function.
- Applied my knowledge of **electric circuitry** to differentiate **15 different types** of user inputs, and then used code written in **C** to display the correct mathematical output on an LCD screen.

EDUCATION

BASc Computer Engineering, University of Waterloo Expected 2029

High School Diploma, AY. Jackson SS. 2020 - 2024