

BRIAN A. CHESKO

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EDUCATION

Rowan University, Glassboro, NJ

Bachelor of Science, Computer Science

May 2021

Bachelor of Science, Mechanical Engineering

May 2021

Honors Concentration, Minor in Mathematics

GPA: 3.98/4.0

PROFESSIONAL EXPERIENCE

Electrified Aircraft Propulsion Project Intern

June 2020 – August 2020

NASA Glenn Research Center, Cleveland, OH (Telework)

- Created SolidWorks 3d printed models and Altium circuit schematic and PCB models for use in hardware-in-the-loop (HIL) avionics instrument panel lab testing setup
- Developed Simulink simulation elements towards an efficient real-time implementation of a high-lift motor controller system
- Produced mechanical drawings for fabrication of aerospace hardware test setup required to resist large vibrational forces according to GD&T (ASME Y14.5) standards

Learning Assistant and Tutor

January 2018 – May 2021

Rowan University Computer Science Department, Glassboro, NJ

- Instructed and oversaw students in lab classes of up to 30 students to help teach computer science course material concepts
- Assisted in sections of Introduction to Object-Oriented Programming and Data Structures & Algorithms and hosted one-on-one online office hours
- Provided one-on-one assistance to students as necessary to address lapses in understanding and reinforce good programming practices

Software Engineering Intern (Back-end)

May 2019 – August 2019

Clover Network, Inc., New York, NY

- Built RESTful API endpoints on top of the product's Java + Hibernate back-end stack and associated queries to pull from and store data within the PostgreSQL database
- Redesigned and implemented the back-end portion for a service allowing merchants to efficiently import large (multi-thousand row CSVs) external lists of customers into their customer audience
- Updated behavior and logic of existing web service features according to new specifications; documented these changes within internal documentation

Software Engineering Intern (Front-end)

July 2018 – September 2018

Clover Network, Inc., New York, NY

- Designed and implemented the logic for a new part of the clover.com front-end shop experience using a responsive React/Redux-based ES6 framework
- Found, analyzed and fixed JIRA-ticketed visual and behavioral bugs within the front-end codebase
- Participated in an Agile development environment to streamline production releases

PROJECTS

Reciprocating Air Engine

Fall 2019

- Designed and modeled several components towards the production of a 50cc linkage-driven air-powered engine using SolidWorks
- Manufactured aluminum, brass and delrin parts using various machining techniques including water jet cutting, milling, reaming, and other operations
- Achieved over 2000 RPM with minimum specifications of over 1000 RPM using a 100 psi air line

Differential Gearbox

Fall 2019

- Utilized SolidWorks to model a differential required to handle two inputs of 1000 RPM and produce an output of 500 RPM
- Constructed the design out of 3D-printed bevel and spur gears and a machined aluminum housing
- Performed static and fatigue analysis of the parts using SolidWorks to determine the failure conditions and factor of safety of the design

- Deep Q-Learning for Game Playing with Snake** *Fall 2019*
- Developed a multithreaded, highly configurable Python implementation of Snake from scratch
 - Created and trained a Deep Q-Network reinforcement learning agent to play game using Keras-RL, TensorFlow and OpenAI Gym with near human-level accuracy

- SolidWorks Car CFD Optimization** *Spring 2020*
- Designed the exterior of a model car to maximize downforce and minimize aerodynamic drag
 - Ran studies using the SolidWorks Flow Simulation toolbox to quantify effects of modifications
 - Incorporated components such as wings, vortex generators, and geometries based on fluid flow theory to achieve a lift-to-drag ratio of -3.5

- Modeling and Control of Ball and Beam System** *Fall 2020 – Spring 2021*
- Modeled an implementation of a ball-and-beam system with 14" track using SolidWorks upon which a ball can roll lengthwise with desired equilibrium ball position input fed via Arduino
 - Implemented and tuned PID control system within MATLAB Simulink to minimize response time and overshoot

- Music Recommendation Web App** *Spring 2021*
- Developed a responsive web application designed to offer music playback and recommendations based on a like-and-dislike system with features such as playlist creation and customization
 - Implemented back-end RESTful API using a stack based on the Django Python framework with a SQLite database and front-end with React and Material UI, utilizing the Spotify Web Playback SDK for in-browser persistent song playback across pages
 - Followed standard software development practices such as creation of wireframes and design documentation across development phases

- Soft Robotic Snake for RoboSoft Competition** *Spring 2021*
- Worked in a team of students across various engineering disciplines to develop a robotic snake capable of traversing an obstacle course including multiple terrains while meeting other design requirements
 - Utilized modular design consisting of segments interconnected by motor-actuated wires which propagate contraction and tension of wires to compress springs to create motion

TECHNICAL SKILLS

Languages & Libraries: Java, C, MATLAB, Python, JavaScript ES6, Redux, React, PostgreSQL, Django, Bash Shell Scripting, HTML, CSS

Operating Systems & Tools: Unix, macOS, Windows, Git, JIRA, SolidWorks, LaTeX, IntelliJ IDEA, PyCharm, Eclipse, Vim, Simulink, Altium

Skills: Geometric Dimensioning and Tolerancing (GD&T), Basic Fabrication, 3D Printing, Project Management

ACTIVITIES

Student University Programmers, Volunteer *September 2017 – May 2021*

- Technical Services, Live Events, Cinema Committees

Rowan Unified Sports, Volunteer *October 2017 – May 2021*

NVIDIA Fundamentals of Deep Learning Workshop for Computer Vision *November 2018*

ICPC Mid-Atlantic Programming Contest *November 2018, 2019*

CERTIFICATIONS

Certified SolidWorks Professional (CSWP), Mechanical Design *July 2020*

Certified SolidWorks Associate (CSWA), Mechanical Design *December 2019*

HONORS AND AWARDS

President's Scholar Award (GPA of 4.0) *Fall 2017/2018/2019/2020, Spring 2020/2021*

Dean's List Recipient (GPA of 3.45+) *Spring 2018/2019*

2021 Computer Science Outstanding Senior Award

- Awarded to one student in the graduating class for outstanding academic achievement and contributions to the university and community over the course of study

Tau Beta Pi Engineering Honor Society Member *Inducted Spring 2021*