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| Qichen Eric Dai  University of Toronto |  | 1169 – 209 Fort York Blvd,  Toronto, ON, M5V4A1  (647)631-9271  eric.dai@mail.utoronto.ca  <https://www.linkedin.com/in/qed11/>  <https://github.com/qed11> |
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| Experiences |  | Education |
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| May 2022 – Aug 2022  Summer Research Student, UTIAS  *Aerospace Computational Engineering Lab*   * Investigated the impact of adaptive mesh refinement on numerical solution accuracy of computational fluid dynamic solvers. * Optimized shape of 2-D airfoils by inversely matching pressure profile over airfoils using adjoint-based optimization methods. * Implemented a numerical solver using finite element method to solve 1D nonlinear reaction-diffusion equation.   Sept 2022 – Feb 2023  Propulsion Intern, *SpaceRyde Inc.*   * Designed a water venturi rig to test different venturi configurations using SolidWorks. Structural validity and flow conditions are simulated and verified using Ansys Mechanical and Fluent. * Designed and integrated a payload for a High-Altitude Balloon flight experiment to construct thermodynamic models for our rocket in stratospheric conditions. * Constructed a website to track the location of the balloon in real time using HTML and JavaScript. * Used SolidWorks to design a venturi for rocket engine flow regulation, and verified flow conditions via Ansys Fluent and CFx. * Developed an iterative rocket configurator using python to optimize rocket designs based on given design parameters.   May 2020 – Aug 2020, May 2021 – Aug 2021  Design Engineer Intern, *Legere Reeds*   * Optimized workflow of synthetic instrument reed design and manufacturing between CAD and CAM processes. * Used Fusion360 and MeshLab to create digital reed surface models. * Used Python to preprocess digital reed surface models, and interface with other design software. * Created a reed surface sampler using Python and NumPy-STL library to generate customized digital reed surface profiles for CNC machines. |  | 2019-2024 (projected)  BASc. in Engineering Science  Aerospace Option  University of Toronto  GPA: 3.80  **Relevant courses**   * Calculus and Linear Algebra * Ordinary/Partial Differential Equations * Scientific Computing * Aerodynamics and Gas Dynamics * Materials of Solids and Structures * Control Systems |
| Technical Skills |
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| **Coding language**: Python, MATLAB, C, Verilog, and Assembly Language  **CAD**: SolidWorks and Fusion360  **Simulation**:Ansys (Fluent, Mechanical, CFx)  **Computational Fluid Dynamics**  **Finite Element Analysis**  **Numerical Optimization**  **Design Engineering and Integration**  Microsoft **Excel** & **Word**, **Google Suites**, and **LaTeX**  **Rocket Propulsion** |
| Soft Skills |
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| * Initiative for challenges * Curiosity * Teamwork and collaboration * Good time management between multiple projects * Quick adaptation to new environment and schedule changes |