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[Joedang.github.io](https://Joedang.github.io)

## EDUCATION

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- Portland State University, 3.65 GPA **Sep. 2013 – Jun. 2016**  
**B.S. Mechanical Engineering**, Maseeh College of Engineering and Computer Science  
**B.S. Physics**, College of Liberal Arts and Sciences
- Portland Community College, 3.0 GPA **Sep. 2008 – Jun. 2010, Sep. 2011 – Sep. 2013**

## EXPERIENCE

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- Mechanical Lead, LV3 **Dec. 2015 – present**  
[Created an open-hardware carbon fiber rocket airframe](#) for the [Portland State Aerospace Society](#)  
Managed interdisciplinary projects among students and professionals  
Published and presented [a conference paper on the project for AIAA SPACE 2016](#)  
Documented design and manufacturing processes to foster institutional knowledge  
Mentored student projects and assembled project teams  
Maintained equipment and lab space  
Designed parts using hand calculations, prototypes, computer models, CFD, and CAD  
Performed FMEA and root-cause analysis
- Mechanical Lead, OreSat **Jan. 2017 – present**  
Coordinated the design of all mechanical subsystems in [Oregon's first satellite](#)  
Maintained the [top-level SolidWorks assembly](#) of the satellite  
Incorporated constraints from NASA, NanoRacks, and OreSat electrical subsystems  
Worked across engineering disciplines to resolve highly coupled designs  
Lead analysis and design reviews
- Lab Manager, PSU Electronics Prototyping Lab **Jan. 2018 – present**  
Maintained equipment and lab space  
Trained students on prototyping equipment  
Ran the lab's parts store

## TOOLS

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- Composites manufacturing (wet, dry, high/low-temperature), metal working
- 3D printers (FDM, SLA, SLS), laser cutters, mills, lathes, hand tools
- PCB routers, soldering (hand, re-flow), Arduino

## SOFTWARE

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- R, MATLAB, C++, Python, Bash, Vim, Git, SolidWorks, Abaqus, AutoCAD, GIMP, Inkscape
- $\text{\LaTeX}$ , Microsoft Office, Libre Office, Google Docs, etc.
- Ubuntu, Windows

## SMALL PROJECTS

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In addition to the projects below, you can check out the rest of my portfolio at [github.com/Joedang/Portfolio](https://github.com/Joedang/Portfolio).

- OpenFOAM analysis  
A simulation of supersonic flow around the nosecone of PSAS' new rocket, used to inform its design and estimate aerodynamic heating.
- PSAS Asset Tracking System Created a specification and front-end for a website to track part maintenance and ownership.
- Restricted 3-body simulation [github.com/Joedang/restricted\\_three\\_body\\_problem](https://github.com/Joedang/restricted_three_body_problem)  
An R script for investigating the motion of satellites within planet-moon systems.
- Ballistic trajectory simulation [github.com/Joedang/Portfolio/tree/master/projectile](https://github.com/Joedang/Portfolio/tree/master/projectile)  
Realistic scenarios of short-range ballistic motion of various projectiles on different planets, accounting for buoyancy, drag, centrifugal, and Coriolis effects.
- N-body simulation [github.com/Joedang/Portfolio/tree/master/MATLAB\\_orbits](https://github.com/Joedang/Portfolio/tree/master/MATLAB_orbits)  
Various scenarios involving an arbitrary number of charged massive particles.

## REFERENCES

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- Supervisors  
Andrew Greenberg [adg@ece.pdx.edu](mailto:adg@ece.pdx.edu)  
Erik Sánchez, PhD [esanchez@pdx.edu](mailto:esanchez@pdx.edu)  
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