

# Weihang Li

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## EDUCATION

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**Purdue University, School of Engineering** 01/2021-12/2022

*M.S. in Aeronautical and Astronautical Engineering (System and Aerodynamic), Expected in 12/2022*

- Relative courses: Plasmas and Electric Discharges, System Safety & Reliability, System Optimization, Tools and Methodologies for Design Systems

**Purdue University, School of Engineering** 08/2017-12/2020

*B.S. in Aeronautical and Astronautical Engineering (System Engineering), Awarded in 05/2021*

- Relative courses: Aerodynamics, Thermodynamics, Structure, Systems Design, Dynamic and Control.
- Honor: Dean's List (4 years), Summer Undergraduate Research Fellowship.

## PAPER & CONFERENCE

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- *The Impact of Cathode Surface Roughness and Multiple Breakdown Events on Microscale Gas Breakdown at Atmospheric Pressure*, xccc 125, 203302 (2019).
- *Crater Formation and Transition of Gas Breakdown Mechanism at Nanoscale*, Purdue Summer Undergraduate Research Symposium, 1 Aug 2019, West Lafayette, IN, USA
- *Case Report: Steroids Rescue Sudden and Persistent Hearing Loss Possibly Owing to Intralabyrinthine Schwannoma and Immune Response from Covid-19 Vaccination*
- *Nano/Micro-Meter Electrode Topology Effects on Electron Emission*, 22nd Annual Directed Energy Science & Technology Symposium, Student Workshop, 11 March 2020, West Point, NY, USA.
- *Experimental Assessment of Electrode Effects on Gas Breakdown for Microscale Gaps*, 21st Annual Directed Energy Science & Technology Symposium, Student Workshop II, 10 April 2019, Destin, FL, USA.

## RESEARCH

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**Plasma and Gas Breakdowns in Nanoscale** 01/2018-Present

*Research Assistant, BioElectrics and ElectroPhysics (BEEP) Lab*

- Conducted research testing conditions affecting the breakdown voltage at micro to nano scale. Designed and manufactured microchip for experiment.
- Compared experimental data with the classic and the new universal gas breakdown theory simulation data.
- Designed and built a fully automatic system using chip carrier to test over 2000 samples in vacuum chamber. Estimated reduced over 400 hours of labor work and reduced 45% of human error caused data loss.
- Tested the surface work function impacted by the gas breakdown process using analytical techniques.

**Electrostatic Accelerator and Plasma Diagnostic** 01/2020-05/2020

*Research Assistant, Electric Propulsion and Plasma Laboratory*

- Used Langmuir Probe, microwave interferometry, spectroscopy for the diagnose of plasma generated by the electrostatic accelerator and plasma jet.
- Operated the electrostatic accelerator for experiment.

**Soil Moisture Remote Sensing using Signal of Opportunity** 08/2018-Present

*Research Assistant, Satellite Radio Navigation Lab*

- Operated USRF310s user defined radio to obtain satellite reflection signals and analyze soil moisture from comparing the original and reflected signal.
- Collected and processed P-band signal. Validated the possibility of using signal from ORBCOMM satellites for measuring soil moisture at soil deepness of 20-100cm.
- Designed and built the customized antenna, electronics and UAV retrofitting for the experiment. System engineering including mission planning, link budget, weight budget and power budget.

## PROJECTS

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### **Fix Wing VTOL Aircraft Design**

08/2020-12/2020

*Senior Design, Chief Engineer, Purdue University*

- Lead a 6 people team on the project of developing a small, fixed wing VTOL aircraft for urban delivery.
- Responsible for system design, Aerodynamic configuration optimization, power system design, dynamic and control system design.
- Full product design life cycle design from analyzing stakeholder needs and requirement definition to hardware design to product verification and validation.

### **SAE Formula Race Car Design**

09/2017-05/2019

*Powertrain Engineer, Formula SAE Team Purdue*

- Participated in the redesign of the exhaust manifold, air intake and cooling intake system.
- Used aerodynamic knowledge and CFD software to optimize ducted airflow for these components.
- Experienced using Creo, AutoCAD for modeling and using water jet, milling and CNC for manufacturing.

### **Radio Telescope and Radio Meteor Monitoring System**

05/2016-05/2017

*Chief Engineer, Affiliated high school of Peking university*

- Designed and built a meteor monitoring system using the radio reflection from the plasma trajectory of the meteor.
- Designed and built customized antenna for the specific frequency need to amplify. Use electronics and user defined radio to receive signal.
- Support the construction of the first radio meteor monitoring network in northern China.

### **Microgravity Liquid Sloshing Experiment in Microgravity Environment**

05/2020-08/2020

*Research Engineer, Purdue University, Course Project*

- Collaborated with Professor Steven Collicott to design experimental devices, build 3D models, construct experimental load, and design an automatic control system
- Designed the power supply equipment suitable for the blue origin rocket, and protected the device from electromagnetic radiation

## WORKING EXPERIENCE

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### **DreamX Edu Tech(STEM Course Provider for Chinese K9 Education)**

11/2019 /08/2021

*Founder, Chief Technology Officer*

- Built and managed a team of 20 people to develop curriculum comprised of 20+ courses in 6 dispensaries with 2000+ course hours.
- Navigated the team to develop 50+ different kinds of teaching appliance such as simple wind tunnel, modular assembled 4 axis UAVs and robotic suit.
- Deployed the tests of courses in 15+ schools among 5000+ students.
- Received 1-million-dollar investment for the deployment of the course.

## SKILLS

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- **Analytical Techniques:** Scanning Electron Microscope (SEM), Atomic Force Microscope (AFM), Oscilloscope, Source Measure Unit (SMU), Probe Station, Electron Back-Scattered Diffraction (EBFD).
- **Programming Language:** Java, MATLAB, C, Python.
- **Modeling software:** Solidworks, Creo, Catia, Ansys, Core
- **Other:** Microsoft Office, Adobe creative Suite, Tableau, MindX, Latex, 3D printing