

Christophe Foyer

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Education:

Washington University in Saint Louis, United States

Aug 2014 – Dec 2017

Bachelor of Science

3.14/4.00 GPA

Major in Mechanical Engineering, Minor in Energy Engineering

- Dean's List (Fall 2014, Fall 2017)

RWTH Aachen, Aachen, Germany

Jun 2017 – Jul 2017

Renewable Energy Technology | Mechatronics and Product Innovation

- Completion with 2.3 (very good) and 1.3 (excellent) respective grades; Best-in-Class award

School for International Training, Reykjavik, Iceland

Jun 2015 – Aug 2015

Renewable Energy Engineering and Resource Economics

Lycée Sainte Marie, Caen, France

Sep 2010 – Jul 2013

Serie S (Science specialization)

- Baccalauréat "Mention Bien" (with honors)

Relevant Coursework:

Engineering Mechanics (I, II, III)

Material Science

Thermodynamics

Sensors and Actuators

Dynamics and Vibrations

Fluid Mechanics

Heat Transfer

Computer Aided Design

Experience:

Design/Build/Fly at Washington University in St. Louis

Mar 2016 – Dec 2017

Co-Founder and Systems Team Lead

Mar 2016 – Dec 2017

Treasurer

Aug 2016 – May 2017

- Co-led the team to 12th place out of 138 teams at the AIAA DBF 2017 competition, and 1st in the Midwest
- Designed aircraft internal system including battery and motor selection with the systems team
- Managed an operating budget of \$10,000 to buy supplies and organize travel to the competition
- Scheduled weekly meetings with the team and set project deadlines

American Society of Mechanical Engineers at Washington University

Jan 2016 – Dec 2017

Event Planner

Sep 2016 – May 2017

- Researched potential STEM-related speakers to fit within budget constraint, presented reasons to fund Michio Kaku's visit to campus, and secured a date for his visit

Domaine du Vivier, Le Mesnil Mauger, France

Jun 2015 – Aug 2017

Seasonal farm hand

(Multiple dates)

- Maintenance and operation of farming equipment and various agricultural work during the summer

Volunteering:

ICC, Ishinomaki, Japan

May 2014

Volunteer

- Construction of two wooden terraces for the local community in a region devastated by the 2011 tsunami.

Projects:

Senior Design Project – Low-Cost CPV

Aug 2017 – Dec 2017

Foyer, Christophe; Rangwala, Adam; and Nana, Deep, "Water Lenses for Low-Cost Concentrator Photovoltaics" (2017). Mechanical Engineering Design Project Class.

- Coding of FEA and ray tracing software for optics simulation in MATLAB
- Development of a sunlight tracking circuit and coding using Arduino
- Creation of a working proof of concept prototype increasing solar cell output by 860%

Motor Test Stand

Aug 2017 – Dec 2017

Design and construction of a motor test stand for Wash. U Design/Build/Fly:

- GUI development, serial communication protocol and sensor integration
- Design and construction of car-mountable frame and electronics enclosure using T-slot aluminum
- Coded in Python and Arduino C, packaged in .exe format for easy deployment to new Windows installations
- Measures RPM, current, voltage, and thrust and logs output to CSV

Electric longboard

Oct 2016 – Dec 2017

Design and construction of a custom built electric longboard:

- CAD, FEA, and part fabrication in aluminum and additive manufacturing of plastic parts
- System design including component selection balancing efficiency and cost
- Designed according to air travel and personal transportation regulations

Naïve Bayes Classifier

Jun 2016 – Aug 2016

Coding of a Naïve Bayes Classifier for financial forecasting using machine learning:

- Average accuracy of 67% on pima-indians-diabetes test dataset.
- Achieved an accuracy of 51.51% when tasked to forecast whether the price of wheat would increase or decrease (1.51% improvement over guessing; severe limitations due to dataset size)

Home Automation

Jan 2015 – May 2017

Custom-built smart home and media center system:

- Voice recognition using google API interfacing with connected microphones
- Coded in Python on a Raspberry Pi running a Linux-based OS
- Control over house appliances and interfacing with Open Source Media Center

Robotics Test Platform

Dec 2013 – Jan 2015

Design, coding, and construction of an internet-controlled robot used for autonomous sensing and navigation testing:

- Coded in Python on Linux-based microcontrollers
- Frontend: webpage coding in HTML and UI design
- Backend: hardware interfacing and communication over WebSocket between the webserver and the local microcontroller.
- Experiments in visual odometry using OpenCV and ROS (ongoing)

Skills and Abilities:

CAD / FEA / CFD:

SolidWorks, Autodesk Inventor, XFLR5

Programming Languages:

Matlab, Simulink, Python, Arduino C (C/C++), HTML

Fabrication:

3D-Printing, Machining (Lathe, Mill), Composite Manufacturing

Software:

Microsoft Office Suite, Windows, Linux

Languages:

*Bilingual French / English
Basic German and Icelandic*