Christophe Foyer

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Education:

Washington University in Saint Louis, United States Aug 2014 – Dec 2017
B.Sc. in Mechanical Engineering, 3.14/4.00 GPA
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

- Successful completion with 2.3/5.0 (very good) and 1.3/5.0 (excellent) respective grades (German grading system)
- 1st place in the Mechatronic Systems and Product Innovation case study.

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:

MATLAB	Sensors and Actuators	Thermodynamics	Engineering Mechanics (I, II, III)
Fluid Mechanics	Dynamics and Vibrations	Material Science	Sustainable Environmental Building engineering

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
- Designed aircraft internal system including battery and motor selection
- Worked on sub-projects with the Systems team including RC electronics training
- 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 Wash. U. Jan 2016 – Dec 2017
Event Planner Sep 2016 – May 2017

- Assisted ASME members with ongoing projects by outlining steps for manufacturing processes and component selection
- 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 Jun 2015 – Aug 2017
Seasonal farm hand

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

Ishinomaki Christian Center May 2014
Volunteer

- Construction of two wooden terraces for the local community and various maintenance work

Projects:

Senior Design Project 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

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 (machined aluminum and 3D-printed PLA)
- System design and component selection.
- 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:

- Resulted in an accuracy of 44% when tasked to forecast whether the price of wheat would increase or decrease (6% meaningful data, using a dataset comprised of only current and past price)

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, C++, HTML*
Fabrication:	*3D-Printing, Machining (Lathe, Mill), Composite Manufacturing*
Software:	*Microsoft Office Suite, Windows, Linux*
Languages:	*Bilingual French / English* *Basic German and Icelandic*