CHRISTOPHE FOYER

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United States: (+1) 816-419-6150 • United Kingdom: (+44) 7444 175493
US and French citizenship | Eligible to work without restriction in the USA and EEA

SUMMARY:

Mechanical Design Engineer with experience in projects in involving mechatronics and software development. Demonstrated track record of finding creative solutions to engineering challenges while operating under tight budgets.

- *CAD, FEA and CFD*
- *Engineering Hand Calculations*
- *Prototyping and Fabrication (metals, plastics, and composites)*
- *Embedded Systems and Software Development*

EXPERIENCE:

Temporary Works Design (TWD) — London, United Kingdom
Design Engineer — Nov 2018 – Present

TWD is an engineering company specialized in creating custom-designed tools and structures to perform transport and installation projects.

- Design of bespoke equipment and structures for civil engineering contractors using Autodesk Inventor
- Verification of structural parameters using engineering hand calculations and finite element analysis

Tata Steel Europe — Ijmuiden, Netherlands
Mechanical Engineering Intern — Apr 2018 – July 2018

Tata Steel is Europe's second largest steel producer, with steelmaking in the UK and Netherlands, and manufacturing plants across Europe.

- Successfully built a large-scale thermal simulation in Python reducing temperature estimation error by 82.4%
- Proof-of-concept enabling potential savings of around one million euros per year if implemented into production
- Organized a training session on collaborative code management (git) for the department

Wash. U. Design/Build/Fly Competition Team — Washington University in St. Louis
Founder — Mar 2016 – Dec 2017

WUDBF is an aerospace-oriented engineering team that attends yearly competitions that are sponsored by the American Institute of Aeronautics and Astronautics (AIAA).

- Co-led the team to 12th place out of 138 teams at the AIAA DBF 2017 competition
- Led the systems team to design and optimize aircraft internal systems through MATLAB simulations
- Managed an operating budget of $10,000 to purchase components and organize travel to competition
- Scheduled weekly meetings with the team and coordinated project deadlines

EDUCATION:

Washington University in Saint Louis — Saint Louis, USA
Bachelor of Science in Mechanical Engineering; Minor in Energy Engineering — Aug 2014 – Dec 2017

RWTH Aachen — Aachen, Germany
Coursework in 'Renewable Energy Technology' | 'Mechatronics and Product Innovation' — Jun 2017 – Jul 2017

School for International Training — Reykjavik, Iceland
Study abroad in Renewable Energy Engineering and Resource Economics — Jun 2015 – Aug 2015

Lycée Sainte Marie — Caen, France
French Baccalauréat with honours - Science track — Sep 2010 – Jul 2013

*References available upon request

SKILLS:

CAD / FEA / CFD	*SolidWorks, Autodesk Inventor, XFLR5, RFEM*
Programming	*Python, MATLAB, Simulink, HTML, CSS, JavaScript*
Fabrication	*Machining (Lathe, Mill), Composite wet layup (FG/CF), 3D-Printing, GD&T*
Software / OS	*Microsoft Office Suite, LaTeX, Windows, Linux*
Languages	*Native English and French (Bilingual) • Basic German and Icelandic*

ACADEMIC PROJECTS:

Senior Design Project – Low-Cost Concentrator Photovoltaics Aug 2017 – Dec 2017

Foyer, Christophe; Rangwala, Adam; and Nana, Deep, "Water Lenses for Low-Cost Concentrator Photovoltaics" (2017). Mechanical Engineering Design Project Class. (https://openscholarship.wustl.edu/mems411/71/)

- 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%

Heat Transfer FEA Mar 2017 – May 2017

Heat transfer course final project; modelling of the cooking of a hotdog using analytical and numerical methods.

- Coding of heat transfer Finite Element heat transfer simulation in MATLAB
- Model validation using temperature measurements and data analysis

INDEPENDENT PROJECTS: *resume.cfoyer.com/#projects*

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
- Coded in Python and Arduino C, packaged in .exe format for easy deployment to new Windows installations
- Measures motor-propeller-battery system 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 FDM printing of plastic parts
- Electrical powertrain design including component selection balancing efficiency and cost
- Designed according to air travel and personal transportation regulations

IRIS Voice Recognition and Home Automation Jan 2015 – May 2017

Custom-built smart home and media centre system for personal use.

- Coded in Python for voice recognition using google API interfacing with connected microphones
- Control over house appliances and interfacing with Open Source Media Center (OSMC)

Robotics Test Platform Dec 2013 – Jan 2015

Coding, and construction of an internet-controlled robot used for autonomous sensing and navigation.

- Coded the Frontend and backend written in Python on a running on a Raspberry pi
- Designed and built the hardware including onboard systems, chassis, and wiring.
- Experiments in visual odometry using OpenCV and ROS *(ongoing)*

Volunteering and Other Work Experience:

American Society of Mechanical Engineers Washington University in St. Louis
Event Planner Sep 2016 – May 2017

- Advised ASME members with ongoing projects on manufacturing and component selection.

Domaine du Vivier Le Mesnil Mauger, France
Seasonal farm hand Jun 2015 – Aug 2017

- Driver for the tossing of the hay and the loading of hay bales during the summer