Clement Rames

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Objective

Passionate researcher exploring the energy-mobility nexus from a data-driven, human-centered perspective seeking an anti-disciplinary environment to expand my research and design technologies for social impact

Education

June 2016 **Master of Engineering**, **Mechanical Engineering** (first class honours), University of Bristol, UK

2014-2015 **Mechanical Engineering Exchange Year** (GPA 3.8/4.0), The University of Texas at Austin

Relevant Courses:
Innovation & Entrepreneurship, Product Design, Mechatronics, Programming, Dynamic Systems & Control, Nonlinear Dynamics, Power Generation, Heat Transfer, Computational Methods for Structural Analysis

Experience

08/16 –present **Sustainable Mobility Research Engineer, National Renewable Energy Lab**, Golden, CO

- Investigating energy impacts, technological and behavioral factors enabling adoption of shared mobility
- Evaluating charging infrastructure requirements and costs of electrifying high mileage shared fleets
- Planned nationwide DCFC network using real-world data, GIS analysis and advanced EV simulation

09/15 – 06/16 **Master's Project on Torque Estimation in Automotive Powertrain**, University of Bristol, UK

- Built analytical physics based powertrain model in Simulink; validated model using experimental data
- Implemented novel nonlinear, robust, and adaptive control strategies to estimate unknown variables

07/15 - 08/15 **R&D Engineering Intern, Silicon Audio**, Austin, TX

- Designed bio-inspired piezoelectric microfabricated directional microphone for hearing aid devices
- Modeled and tested microphone directivity and thermal drift of optical interferometry seismometer

07/13 - 09/13 **Renewable Energy Consulting Intern, OST Energy**, Brighton, UK

- Forecasted and monitored performance of solar PV power plants; reported results to stakeholders
- Acquired in-depth knowledge of renewables, and GIS, data analysis and project management experience

Skills

- Creative problem-solver, design thinker. Expert in systems modeling, simulation, and control algorithms
- Fluent in English, French and German. Strong entrepreneurial mindset and commitment to sustainability
- Extensive experience in Python, SQL (Postgres), MATLAB/Simulink, GIS (QGIS, Mapbox), Git/GitHub
- Proficient in CAD (Inventor, AutoCAD), FEA (COMSOL Multiphysics), Machine Learning (scikit-learn)

Accomplishments

- Master's thesis on torque estimation won best project award from Institution of Mechanical Engineers
- Volunteering for health justice (Denver Food Rescue) and refugee rights (African Community Center)
- Two-time UK College Water Polo champion. Quad Rock finisher (25 mi. trail run in Rocky Mountains)
- Lived and worked in multiple countries, gaining an international perspective and excellent adaptability

Selected Publications

- Rames, C. 2017. Towards Energy Efficient and Shared Mobility Services. BECC conference presentation
- Wood, E., Rames, C., Muratori, M., Raghavan, S., and Melaina, M. 2017. National Plug-in Electric Vehicle Infrastructure Analysis. US DOE EERE technical report
- Wood, E., Rames, C., Muratori, M., Raghavan, S., and Young, S. 2017. Charging Electric Vehicles in Smart Cities: An EVI-Pro Analysis of Columbus, Ohio. NREL technical report
- Harding, T., Rames, C., Yu Teh, H., Mill, T., Na, J., Chen, A., and Herrmann, G. 2017. Engine torque estimation with integrated unknown input observer and adaptive parameter estimator. IFAC conference