

**United Technologies Research Centre Ireland, Ltd.**

4th Floor, Penrose Business Centre,  
Penrose Wharf  
Cork, Ireland  
+353 (0)21 4508440



January 2014

**Internship at UTRC Ireland – Power Electronics/Embedded systems**

United Technologies Corporation (UTC) is a \$62 billion dollar, diversified company that provides a broad range of high-technology products and services to the global aerospace and building systems industries. UTC's commercial businesses are Otis elevators and escalators and UTC Climate, Controls & Security, a leading provider of heating, ventilation, air conditioning, fire and security systems, building automation and controls. Our aerospace businesses are Sikorsky aircraft and the new UTC Propulsion & Aerospace Systems, which includes Pratt & Whitney aircraft engines and UTC Aerospace Systems aerospace products.

The company also operates a central research organization, United Technologies Research Center (UTRC) that pursues technologies for improving the performance, energy efficiency and cost of UTC products and processes. Founded in 1929, UTRC is located in East Hartford, Connecticut (U.S.), with an office in Berkeley, California, and research and development centres in Shanghai, China, and Cork, Ireland.

UTRC invites qualified individuals to apply for the following position in its European research hub in Ireland. A competitive compensation and benefits package will be provided to the successful candidates.

***UTRCI currently has a student internship opportunity for 6 months with an immediate start.***

**Internship Program**

This internship program will involve the implementation of motor drive control algorithms in a multicore FPGA platform interfacing a dynamometer electronic test load. The implementation of the algorithms will be developed by using Model Based Design tools to facilitate the integration with the rest of the software layers and to simplify the validation and verification tasks. The student will begin by understanding the motor drive application and by setting up the dynamometer test rig. The student will then build on this knowledge in order to implement control strategies to manage the dynamometer system in a Model Based Design environment.

**Required experience/skills**

Masters or PhD student with a strong academic record in Embedded Systems, Power Electronics or a related discipline, and with excellent mathematical, analytical and problem-solving ability.

*Software skills:* Matlab/Simulink, Vivado Design Suite, VHDL, C.

The ideal candidate is a self-starter who works well in an international teaming environment, is extremely well-organized and has excellent interpersonal, leadership and communication skills.

This position will be located at UTRC's European Hub in Cork, Ireland and will report to the in-country General Manager. To be eligible to apply for the position, candidates must be legally entitled to work and reside in Ireland.

Contact person: Fran Gonzalez-Espin, [GonzalFJ@utrc.utc.com](mailto:GonzalFJ@utrc.utc.com)

**United Technologies Research Centre Ireland, Ltd.**

4th Floor, Penrose Business Centre,  
Penrose Wharf  
Cork, Ireland  
+353 (0)21 4508440



January 2014

## **Internship at UTRC Ireland – Power Electronics**

United Technologies Corporation (UTC) is a \$62 billion dollar, diversified company that provides a broad range of high-technology products and services to the global aerospace and building systems industries. UTC's commercial businesses are Otis elevators and escalators and UTC Climate, Controls & Security, a leading provider of heating, ventilation, air conditioning, fire and security systems, building automation and controls. Our aerospace businesses are Sikorsky aircraft and the new UTC Propulsion & Aerospace Systems, which includes Pratt & Whitney aircraft engines and UTC Aerospace Systems aerospace products.

The company also operates a central research organization, United Technologies Research Center (UTRC) that pursues technologies for improving the performance, energy efficiency and cost of UTC products and processes. Founded in 1929, UTRC is located in East Hartford, Connecticut (U.S.), with an office in Berkeley, California, and research and development centres in Shanghai, China, and Cork, Ireland.

UTRC invites qualified individuals to apply for the following position in its European research hub in Ireland. A competitive compensation and benefits package will be provided to the successful candidates.

***UTRCI currently has a student internship opportunity for 6 months with an immediate start.***

### **Internship Program**

This internship program will involve analysis of architectures for aircraft actuation systems, with special emphasis on electrohydrostatic and electromechanical actuators. The characterization of the actuators will focus on the motor drive and electrical motor and will take into account system integration, safety constraints and operation profiles during flight and on-ground operations. An additional task will include modelling and simulation of relevant actuation systems.

### **Required experience/skills**

Masters or PhD student with a strong academic record in Power Electronics or a related discipline, with emphasis on actuation systems and with excellent mathematical, analytical and problem-solving ability. Knowledge on aircraft systems will be a plus.

*Software skills:* Matlab/Simulink, PSIM, Dymola.

The ideal candidate is a self-starter who works well in an international teaming environment, is extremely well-organized and has excellent interpersonal, leadership and communication skills.

This position will be located at UTRC's European Hub in Cork, Ireland and will report to the in-country General Manager. To be eligible to apply for the position, candidates must be legally entitled to work and reside in Ireland.

Contact person: Fran Gonzalez-Espin, [gonzalfj@utrc.utc.com](mailto:gonzalfj@utrc.utc.com)

## United Technologies Research Centre Ireland, Ltd.

4th Floor, Penrose Business Centre,  
Penrose Wharf  
Cork, Ireland  
+353 (0)21 4508440



January 2015

### **Internship at UTRC Ireland – Aircraft Systems Modelling and Design**

United Technologies Corporation (UTC) is a \$62 billion dollar, diversified company that provides a broad range of high-technology products and services to the global aerospace and building systems industries. UTC's commercial businesses are Otis elevators and escalators and UTC Climate, Controls & Security, a leading provider of heating, ventilation, air conditioning, fire and security systems, building automation and controls. Our aerospace businesses are Sikorsky aircraft and the new UTC Propulsion & Aerospace Systems, which includes Pratt & Whitney aircraft engines and UTC Aerospace Systems aerospace products.

The company also operates a central research organization, United Technologies Research Center (UTRC) that pursues technologies for improving the performance, energy efficiency and cost of UTC products and processes. Founded in 1929, UTRC is located in East Hartford, Connecticut (U.S.), with an office in Berkeley, California, and research and development centres in Shanghai, China, and Cork, Ireland.

UTRC invites qualified individuals to apply for the following position in its European research hub in Ireland. A competitive compensation and benefits package will be provided to the successful candidates.

***UTRCI currently has a student internship opportunity for 6 months with an immediate start.***

#### **Internship Program**

This internship program will involve multi-domain, hierarchical modelling and analysis of on-board mechanical, hydraulic and electrical systems on aircraft and exploration of optimal architectures.

The student will begin understanding requirements for aircraft systems and subsystems and then he will build on this knowledge to develop hierarchical models of on-board aircraft systems (e.g. actuators) and develop systems architecture trade-off studies and optimized designs.

#### **Required experience/skills**

Masters or PhD student with a strong academic record in Systems Engineering or a related discipline, and with excellent mathematical, analytical and problem-solving ability. Knowledge of aircraft systems, modelling and control of dynamic systems, requirement definition and optimization of systems architecture will be required.

*Software skills preferred:* Modelica based modelling tools (e.g. Dymola, Simulation-X), Matlab/Simulink, Rational Doors, Python, PLM

The ideal candidate is a self-starter who works well in an international teaming environment, is extremely well-organized and has excellent interpersonal, leadership and communication skills.

This position will be located at UTRC's European Hub in Cork, Ireland and will report to the in-country General Manager. To be eligible to apply for the position, candidates must be legally entitled to work and reside in Ireland.

Contact person: Virgilio Valdivia-Guerrero, [guerrevv@utrc.utc.com](mailto:guerrevv@utrc.utc.com)