

REMUS MIHAIL PRUNESCU



PERSONAL DATA

Born in Romania, 29 December 1984

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WORK EXPERIENCE

Development Engineer

Real-Time Hardware
C/C++

2016.01 → Now Propeller Control - Copenhagen, Denmark

Project title: **Dynamic Propeller Control**. Design and implementation on real-time hardware of advanced control algorithms: model predictive controllers and state estimators (e.g. Kalman filters). Project application: diesel engines for container ships.

Industrial PhD Student

Dynamic Modelling
Nonlinear Systems
Control Theory
Process Optimization
Fault Diagnosis
Real-Time Monitoring
C/C++
Matlab/Simulink
python
git

2012.04 → 2016.01 **DONG Energy** - Copenhagen, Denmark

Project title: **Dynamic Modeling, Optimization, and Advanced Control for Large Scale Biorefineries**.

I developed BioSim, a dynamic simulator for large scale second generation biorefineries resembling the **Inbicon** technology. I coded the entire product in C with Matlab and Simulink interfaces. The Simulink library allows the user to reconfigure the biorefinery architecture and test different ideas. I also designed a default low level regulatory layer, and supervision layers for optimization, monitoring and diagnosis. In case of real measurements collected from a plant, the model can be automatically calibrated for more precised simulations. Scientists and process engineers can use BioSim to scale up a plant, design new control methods, or test new optimization and diagnosis techniques before real implementation.

Software Developer

C/C++
Multithreading
gtest

2008.08 → 2009.03 **BitDefender** - Bucharest, Romania

BitDefender is the most successful security software company from Romania. I was a member of the Desktop team, which had as objective the integration of the security tools into a user friendly application. My task was to evaluate different automated testing frameworks for implementing a test driven development workflow.

Software Developer

2006.06 → 2007.09 **AMA** - Bucharest, Romania

AMA or Advanced Mobile Applications is a social software developer for mobile devices. I was part of the C/C++ development team that was releasing entertainment applications. The main challenge was to develop efficient algorithms for mobile devices with limited resources.

EDUCATION

Technical University of Denmark

2012.04 → 2015.11 **Industrial PhD Student**

Courses: Analysis and Control of Nonlinear Systems, Communicating Advanced Topics in Electrical Engineering, Adaptive L1 Control, Business Course for Industrial PhD Students, Uncertainty and Sensitivity Analysis of Numerical Models.

Thesis title: Dynamic Modeling, Optimization, and Advanced Control for Large Scale Biorefineries.

Technical University of Denmark

2009.08 → 2011.10 **MSc. in Automation and Robot Technology**

Courses: Robust and Fault Tolerant Control, Stochastic and Adaptive Control, Model Predictive Control, Aircraft Control and Simulation, Control Relevant Wind Turbine Modeling, Robotics, Plantwide Optimizing Control, TEMO (Technology, Economics, Management and

Organization), Projects in Control, Linear Control Design 2, Intelligent Systems, Advanced Fault Tolerant Control.

Thesis title: Thermal Reactor Modeling and Control for Bio-Ethanol Production Processes. The paper deals with modeling and control of a thermal reactor for biomass pretreatment using computational fluid dynamics tools.

GPA: 10.7/12

Spring 2009

Diploma Thesis

UPJV, Amiens,
France

I wrote my diploma thesis at Université de Picardie Jules Verne (UPJV) in Amiens, France. The paper was entitled **Vehicle Dynamics and Control** and it approaches new vehicle control techniques meant to improve the stability and the maneuverability of a 4 wheel steering machine.

2004.09 → 2009.06

Engineer Diploma in Automatic Control

University
Politehnica,
Bucharest,
Romania

Courses: Mathematics, Physics, Computer Programming, Algorithms, Differential Equations, Electrotechnics, Assembler, Object Oriented Programming, Electrical Circuits, Advanced Mathematics, System Theory, Computer Architecture, Modeling and Simulation, Digital Signal Processing, Classical Control, System Identification.

GPA: 9.2/10

ADDITIONAL INFORMATION

Honors and Awards

Speaker and Chair of Biofuel Session, World Congress of Chemical Engineering 9 (August 2013), Seoul, South Korea. **Advances in Monitoring, Diagnosis and Control of Biorefineries.**

Best Presentation in Session Award, The American Control Conference 2013, Washington D.C., USA. **Modeling and L1 Adaptive Control of pH in Bioethanol Enzymatic Process.**

Publications

PhD Thesis

Prunescu R. M., 2015. **Dynamic Modeling, Optimization and Advanced Control for Large Scale Biorefineries.**

Journal Papers

Prunescu R. M., Sin G., Blanke M., J. G. Jakobsen, 2015. **Dynamic modeling and validation of a biomass hydrothermal pretreatment process - A demonstration scale study.** AIChE Journal, vol. 61, p. 4235-4250.

Prunescu R. M., Sin G., 2013. **Dynamic modeling and validation of a lignocellulosic enzymatic hydrolysis process - A demonstration scale study.** Bioresource Technology, vol. 150, p. 393-403.

Language Skills

Languages

ENGLISH · Fluent
FRENCH · Advanced

DANISH · Beginner
ROMANIAN · Mother Tongue

Computer Skills

Engineering Tools

Matlab/Octave (Expert), Simulink (Expert)

Programming

C/C++ (Expert), L^AT_EX (Expert), Python (Advanced)

Databases

SQL (Advanced), sqlite, HDF5

Hobbies

Sports

Half marathon runner. I also play futsal for a local club in the Copenhagen Futsal league.

October 15, 2016