

# Oliviu C. GHICA

0757-205-791 | oliviughica@gmail.com | [www.oliviughica.com](http://www.oliviughica.com)

## EDUCATION

---

2011. **Ph.D.** Electrical Engineering and Computer Science, Northwestern University (GPA 4.0/4.0)  
Thesis: "Extending Lifetime in Large Scale Wireless Sensor Networks:  
Secure Multipath Routing and Load-Aware Tracking"
2006. **M.Sc.** Electrical Engineering and Computer Science, Northwestern University (GPA 4.0/4.0)  
Thesis: "Controlled Multi-Path Routing and Sensor Networks Lifetime"
2003. **B.Eng.** (with Honors), Control Systems and Computer Science, "Politehnica" University of Bucharest (GPA 3.9/4.0)  
Thesis: "Dual DSP Adaptive Control System"

## SKILLS

---

### Software Engineering

Java, JSE, Hibernate, RESTful WebServices & SOA, XML/JSON, MySQL, Apache  
JUnit/TestNG QA frameworks (TDD methodology)

### Electrical Engineering

General knowledge on analog and digital circuitry theory  
PCB Layout design (OrCAD), physical prototyping  
Embedded Systems Programming (Assembly, C, Arduino platforms, PICs)

### Wireless Sensor Networks Engineering

Familiar with Z-Wave & ZigBee (802.15.4) based network integration  
Sensor network based solutions for energy-efficiency, security, entertainment and home automation  
Experienced with large-scale sensor network deployments in simulated environments  
Software simulator development (e.g. SIDnet-SWANS, a wireless sensor network simulator)

### Control Systems Engineering

Linear systems control: PID, Fuzzy, Ziegler-Nichols tuning methodology, cascade control  
Non-linear systems control: feedback & trajectory linearization, back-stepping  
Dynamic system identification, controllability, observability & controllability  
Adaptive, optimal, robust and stochastic control.

### IT. Application Performance Management

Enterprise Grade End-to-End Application Availability & Performance Monitoring Solutions / Architect  
APM, BPM, web-analytics, JVM/.Net monitoring w/ profiling, queues & integration points, etc

### IT. Data Modeling

Relational Data Modeling

### Personal Skills

Excellent problem solving abilities  
Good organizational skills  
Analytical, detail oriented  
Fast learner with diverse-domain knowledge, able to correlate ideas from diverse fields to innovate  
Team-oriented, sociable and very open to share knowledge with others

## PROFESSIONAL EXPERIENCES

---

### 2011 - 2012. **IT Service Manager, McDonald's Corporation (Employee)**

- Supervised outsourced services of Performance Monitoring for McDonald's financial & promotion systems
- Managed Performance and Availability Monitoring Deployments in global financial and promotion systems
- Provided thought leadership in settling the IT strategy for McDonald's corporation for global applications
- Engineered ITIL v3 processes for outsourced resources operations
- Architected the service requirements for the next generation of Application Performance Management of the entire global, mission critical McDonald's applications portfolio.
- Achieved formal training in "Management of Organizations" and "Developing a Global Mindset"

**Skills:** *Strategic Thinking, APM domain knowledge, ITIL v3 Service Management, Communication, Management*

### 2010-2012. **Business Technical Analyst (primary), Enterprise Architect (secondary)**

*McDonald's Corporation (Consultant through "True Consulting")*

- Architected the main Application Availability and Performance Monitoring & Management solution, as-a-service, for McDonald's global Financial applications
- Managed and provided technical leadership in deploying APM-aaS in McDonald's main financial system
- Provided cost-analysis & business impact analysis for performing structural changes to the main HR-system
- Provided cost-projections and architectural assessments for scaling McDonald's financial system in next years
- Process engineering for incident and problem management for global impact with outsourced resources
- Provided thought leadership in deploying APM solutions on broader scale across multiple McD's applications.

**Skills:** *Strategic Thinking, APM domain knowledge, ITIL v3 Service Management, Communication, Management*

### 2009. **System Analyst & Software Engineer, World Evolved Services, New York, USA (Intern)**

- Developed core infrastructure for a secure, scalable and high-performance distributed flow control system for a large scale service-oriented system.
- Researched recently-published approaches to DIFC systems, formal specification of the solution, feasibility and projected performance analysis, project planning, risk assessment, scheduling, progress tracking and implementation.
- Post-development, I have conducted Quality Assurance tests, performance profiling, optimizations and documentation.
- Implemented two high-speed services:
  1. a multithreaded session service to support user & service authentication and session management
  2. XEV, a proof of concept high-speed trading prototype based on a complex event processor

**Skills & Tools:** Java, J2EE, RESTful Web Services, MySQL, junit, JBoss, Jira, RUP+Agile project planning

### 2006-2007. **Software Engineer, BEA Systems (acquired by Oracle) San Francisco, USA (Intern)**

- Developed systems for BEA's mainline "complex event processing engine", a core component of the WebLogic Event Server WL EvS. R&D. Project served as middleware component in high-speed trading and banking industry
- Performed performance profiling, tuning and optimizations, employing critical path analysis for CEP

**Skills & Tools:** Java, Algorithms, jRockit, jProfiler, SOA, Perforce

### 2002-2003. **Software, Hardware & Embedded Systems Engineer,**

*Motorola DSP Center, Romania (Graduation Project Sponsorship/Collaboration)*

- Prototyped software/hardware solutions based on Motorola DSP 56858 chips, for a frequency analyzer towards model-identification of dynamic systems in control systems engineering.

**Skills & Tools:** C++(CodeWarrior), Assembling, Circuit & PCB design (OrCad)

## ACADEMIC/TEACHING

---

### Courses Taught as Teaching Assistant

- @ “Politehnica” University of Bucharest
  - Theory of Control Systems (1x)
- @ Northwestern University, USA
  - Data Management and Information Processing - (4x)
  - Advanced Programming (C/C++) for Computer Engineers (2x)
  - Information Processing in Wireless Sensor Networks - (2x)
  - Introduction to Computer Systems (C, OO) - (1x)
  - Applications of Electronic Devices – (1x)
  - Introduction to Feedback/Control Systems – (1x)
  - Fundamentals of Circuits – (2x)

## AWARDS

---

2010. *Terminal Year Fellowship*, Department of EECS, Northwestern University
2009. *Best Teaching Assistant Award*, Department of EECS, Northwestern University
2005. *Searle Center for Teaching Excellence Award for International Scholar*, Northwestern University
- 2004-2005 *Walter P. Murphy Fellowship*, Department of EECS, Northwestern University
2003. *First Prize for Scientific Communications in Control System Engineering*, ”Politehnica” Univ. of Bucharest
2003. *Awarded “Diploma of Excellence for Outstanding Professional Results”*, “Politehnica” Univ. of Bucharest
- 1998-2003. *Merit Scholarship*, “Politehnica” University of Bucharest

## REFERENCES

---

### McDonald’s Corporation

Hodo Deandre, Director

[Deandre.Hodo@us.mcd.com](mailto:Deandre.Hodo@us.mcd.com)

### McDonald’s Corporation

Sausan Yazji, Enterprise Architect

[sausan.yazji@beamglobal.com](mailto:sausan.yazji@beamglobal.com)

+1-630-926-2015

### Northwestern University

Prof. Scheuermann

[peters@eecs.northwestern.edu](mailto:peters@eecs.northwestern.edu)

+1-847-491-7141

### Northwestern University

Dr. Goce Trajcevski

[goce@eecs.northwestern.edu](mailto:goce@eecs.northwestern.edu)

+1-847-491-7069

### World Evolved Services (Former)

Nikolaos Michalakis, Software Engineer

[Nikos.michalakis@gmail.com](mailto:Nikos.michalakis@gmail.com)

+1-917-678-3194

### BEA Systems (Former)

Larry Dino, Manager

[larry.dino@comcast.net](mailto:larry.dino@comcast.net)

+1-510-304-0914

1. **Security of Electrostatic Field Persistent Routing: Attacks and Defense Mechanisms** (to appear)  
Oliviu C. Ghica, Cristina Nita-Rotaru, Goce Trajcevski, Peter Scheuermann  
9<sup>th</sup> European Dependable Computing Conference, EDCC May 2012
2. **Selecting Tracking Principals with Epoch Awareness**  
Oliviu C. Ghica, Goce Trajcevski, Fan Zhou, Roberto Tamassia, Peter Scheuermann  
18th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems – Nov. 2010
3. **Improving the Energy Balance of Field-based Routing in Wireless Sensor Networks**  
Goce Trajcevski, Oliviu C. Ghica, Peter Scheuermann, Marco Zuniga, Rene Schubotz, Manfred Hauswirth  
Global Communications Conference (IEEE-Globecom) – December 2010
4. **Tracking-based Trajectory Data Reduction in Wireless Sensor Networks**  
Goce Trajcevski, Oliviu C. Ghica, Ouri Wolfson, Ugo Buy,  
Peter Scheuermann, Fan Zhou, Dennis Vaccaro  
*IEEE International Conference on Sensor Networks, Ubiquitous and Trustworthy Computing (SUTC)*,  
Newport Beach, CA, 2010
5. **Controlled Multi-Path Routing in Sensor Networks Using Bezier Curves**  
Oliviu C. Ghica, Goce Trajcevski, Peter Scheuermann, Nikolay Valtchanov, Zachary Bischof  
*The Computer Journal*, 2010, accepted, to appear
6. **Trajectory Data Reduction in Wireless Sensor Networks** [to appear]  
Oliviu C. Ghica, Goce Trajcevski, Ouri Wolfson,  
Ugo Buy, Peter Scheuermann, Fan Zhou, Dennis Vaccaro  
*International Journal of Next-Generation Computing*, 2010
7. **A Case for Meta-Triggers in Wireless Sensor Networks**  
G. Trajcevski, N. Valtchanov, O. Ghica, P. Scheuermann, Z. Bischoff,  
*Eighth IEEE International Symposium on Network Computing and Applications*, Cambridge, MA, 2009
8. **SIDnet-SWANS: A Simulator and Integrated Development Platform for Sensor Networks Applications**  
Oliviu Ghica, Goce Trajcevski, Peter Scheuermann, Zachary Bischoff, Nikolay Valtchanov  
*The 6th ACM Conference on Embedded Networked Sensor Systems (SenSys)*, Raleigh, NC, 2008
9. **Alternating Multiple Tributaries + Deltas**  
Goce Trajcevski, Oliviu Ghica, Peter Scheuermann, Roberto Tamassia, Isabel Cruz  
*Proc. International Workshop on Data Management for Sensor Networks (DMSN)*  
Auckland, New Zealand, 2008
10. **Alternating Routes in Sensor Networks**  
Oliviu Ghica, Goce Trajcevski, Peter Scheuermann  
*Proc. Information Processing in Sensor Networks (IPSN)*, Nashville, USA
11. **CAR: Controlled Adjustment of routes and Sensor Networks Lifetime**  
Goce Trajcevski, Oliviu Ghica, Peter Scheuermann  
IEEE International Conference Mobile Data Management (MDM),  
Nara, Japan, 2006
12. **Evolving Triggers for Dynamic Environments**  
Goce Trajcevski, Peter Scheuermann, Oliviu Ghica, Anika Hinze, A. Voizard  
International Conference on Extending Database Technology (EDBT),  
Munich, Germany, 2006
13. **DualDSP Adaptive Control System**  
Oliviu Ghica, Ioan Dumitrache, Costel Ilas, Daniel Brosteanu  
International Conference on Control Systems and ComputerScience (CCSC),  
Bucharest, Romania, 2003
14. **Numerical Techniques in Control Systems (Book)**  
Ioan Dumitrache, Constantin Buiu, Oliviu Ghica  
Published by Ed. Minerva,  
Bucharest, Romania, 2003