

# JUAN F. RAMIREZ ROCHAC

Adjunct Professor  
Department of Computer Science and Information Technology  
University of the District of Columbia  
jrochac@udc.edu

## EDUCATION

Master of Science in Electrical Engineering December 2014  
University of the District of Columbia, 4.0 GPA  
4200 Connecticut Avenue NW, Washington, DC 20008

- *Related courses:* Linear Systems, Probability and Random Processes, Autonomous Mobile Robots
- *Software:* Tanner Tools (S-edit, L-edit, LVS, T-Spice), Xilinx ISE Design Suite, VHDL, VLSI, Aria
- *Projects:* An autonomous wall-following/map-building algorithm using sonar sensors on Bots  
FPGA implementation of adaptive fuzzy classifiers for spectral detection of infrared photo-thermal imaging to trace explosives on relevant substrates

Master of Science in Computer Science July 2010  
University of the District of Columbia, 4.0 GPA  
4200 Connecticut Avenue NW, Washington, DC 20008

- *Relevant courses:* Advanced Database Systems, Data Mining, Bioinformatics, Network Security
- *Software:* Visual C++, Oracle, Visio, Project, Blackboard, PeopleSoft, Mac OS, Java, PHP, MySQL
- *Projects:* Developed a spatial-temporal database solution for continuously moving objects  
Implemented an adaptive fuzzy classifier for edge detection in latent fingerprints
- *Master's thesis:* A runoff monitoring system for planning and decision making in civil infrastructure, natural environment protection, and water pollution related emergencies

Bachelor in Information Systems Engineering September 2005  
Univerdad de El Salvador 7.6/10 CGPA  
Final 25th Avenida Norte, San Salvador, El Salvador

- *Coursework:* Data Structures, Operating Systems, Computer Architecture, IT Project Management
- *Software:* Pascal, C, Visual Basic, Simnet II, Windows, MS Word, Excel, PowerPoint, Access
- *Senior project:* A data warehouse solution for pattern recognition in the National Institute of Cancer of El Salvador using MySQL, PostgreSQL and PHP on a Red Hat server.

## PUBLICATIONS

- Pradeep Behera, Byunggu Yu, Juan F. Ramirez Rochac, "A New Sensor Technology for Sewer Flow Monitoring", *ASCE EWRI World Environmental & Water Resources Congress: Emerging and Innovative Technologies*, May 2011, Palm Spring, CA.
- Byunggu Yu, Pradeep K. Behera, Juan F. Ramirez Rochac, "Advanced Sensor-Computer Technology for Urban Runoff Monitoring", *SPIE Smart Structures: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems*, Vol. 7981-213, March 2011, San Diego, CA.
- Byunggu Yu, Pradeep Behera, Juan F. Ramirez Rochac, Seon Ho Kim, and Dong Jeong, "Transformative Sensor Technology for Urban Runoff Monitoring", *NSF CMMI Research and Innovation Conference – Engineering for Sustainability and Prosperity*, January 2011, Atlanta, GA.
- Juan F. Ramirez Rochac, Lily Liang, Byunggu Yu and Zhao Lu; "An Adaptive Fuzzy Classifier Approach to Edge Detection in Latent Fingerprint Images", *22nd IEEE International Conference on Tools with Artificial Intelligence*, Vol. 1, pp. 178-185, October 2010, Arras, France.
- Byunggu Yu, Pradeep K. Behera, Seon Ho Kim, Paul Cotae, Juan F. Ramirez Rochac, Travis Branham; Environmental Runoff Monitoring, *SPIE Conference on Sensor and Smart Structures Technologies*, Vol. 7647-48, March 2010, San Diego, CA.

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## EXPERIENCE

Adjunct Professor

*August 2010 – present*

University of the District of Columbia,  
4200 Connecticut Avenue NW, Washington, DC 20008

- Transfer not only knowledge but also practical skills, methods and techniques to undergraduates
- Administrate, grade and assess work and examinations and provide feedback to students
- Keep regular office hours

Research Assistant

*April 2009 – July 2010*

University of the District of Columbia,  
4200 Connecticut Avenue NW, Washington, DC 20008

- Attended the 2nd NSF-sponsored Asia-Pacific Summer School 2009 in Smart Structures Technologies held at the University of Illinois at Urbana-Champaign.
- Maintained laboratory equipment, developed experimental apparatus for on-going project, implemented in-house software for lab and field validation and wrote/presented progress reports and final manuscripts.

Admissions Officer

*January 2008 – July 2008*

Lado International College, Silver Spring, MD

- Processed I-20 applications, certificates, transcripts, ad-hoc letters, and ID cards
- Took tuition payments and verified receipts and reported receipt book balance daily

Assistant Director

*October 2005 – November 2006*

Grupo CCI, Centros de Capacitación Internacional, El Salvador

- Supervised the hiring/firing process; recruited, selected, trained and evaluated instructors
- Taught computer applications such as Windows, Word, Excel, PowerPoint, and Internet

## TEACHING HISTORY

### Recent Courses

WBHR-LSAMP: Adv. Object-Oriented Programming, Univ. of the DC – *summer 2013*  
Introduction to Programming, Univ. of the DC – *fall 2011, fall 2012, spring 2013, fall 2013*  
Computer Science I, Univ. of the DC – *fall 2011, spring 2012, fall 2012, spring 2013, fall 2013*  
Data Structures, Univ. of the DC – *summer 2011, spring 2012, fall 2012, spring 2013, fall 2013*  
Database Systems Design, Univ. of the DC – *fall 2011, spring 2012*  
Software Engineering, Univ. of the DC – *spring 2011*  
Computer Architecture, Univ. of the DC – *spring 2011*  
Computer Organization I, Univ. of the DC – *fall 2010*  
Foundations of Computing, Univ. of the DC – *fall 2010, spring 2011, fall 2011*

### Classes in Spanish

Computer Applications (Instructor), Centros de Capacitación Internacional, El Salvador – *fall 2005*  
Pre-calculus (TA), School of Engineering and Architecture, University of El Salvador – *winter 2002*

## RESEARCH INTERESTS

- Robotics • Wireless Sensors • Spatial-temporal Databases • Data Mining • Information Assurance

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## REFERENCES

Byunngu Yu, Ph.D.	Chair & Full Professor, dept. of Computer Science at UDC	(240) 401-2473
Pradeep. Behera, Ph.D., P.E.	Associate Professor, dept of Civil Engineering at UDC	(301) 728-2115
Ms. Jewel Thompson,	Director of Volunteers at Shady Grove Hospital, MD	(240) 279-6111