

## Brian S. Borowski

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- Objective:** To obtain an interdisciplinary Ph.D. in computer science and electrical engineering by conducting research in underwater acoustic communication.
- Education:** **Stevens Institute of Technology**, Hoboken, NJ  
Doctor of Philosophy in Computer Science/Electrical Engineering – fifth year candidate, expected 2010  
Graduate Certificate in Distributed Systems, January 2008  
Graduate Certificate in Computer Systems, May 2007
- Master of Science in Computer Science, May 2004 GPA 4.0/4.0  
Graduate Certificate in Database Systems, May 2004
- Seton Hall University**, South Orange, NJ  
Bachelor of Science in Computer Science, May 2001 GPA 4.0/4.0  
Minor: Mathematics
- Publications:** Brian Borowski and Dan Duchamp, *Short Paper: The Softwater Modem – A Software Modem for Underwater Acoustic Communication*, in Proceedings of the ACM International Workshop on Underwater Networks (WUWNet'09), November 2009, Berkeley, California.
- Brian Borowski, *Characterization of a Very Shallow Water Acoustic Communication Channel*, in Proceedings of MTS/IEEE OCEANS 2009, October 2009, Biloxi, Mississippi.
- Brian Borowski, Alexander Sutin, Heui-Seol Roh, and Barry Bunin, *Passive Acoustic Threat Detection in Estuarine Environments*, in Proceedings of SPIE Vol. 6945, March 2008, Orlando, Florida.
- Brian Borowski, Heui-Seol Roh, Barry Bunin, and Alexander Sutin, *Estimation of Passive Acoustic Threat Detection Distances in Estuarine Environments*, in Proceedings of the 153<sup>rd</sup> Meeting of the Acoustical Society of America, June 2007, Salt Lake City, Utah.  
(Placed second in the *Best Student Paper* competition of the Engineering Acoustics section)
- Presentations:** *The Softwater Modem – A Software Modem for Underwater Acoustic Communication*, ACM International Workshop on Underwater Networks (WUWNet'09), November 3, 2009, Berkeley, California.
- Characterization of a Very Shallow Water Acoustic Communication Channel*, MTS/IEEE OCEANS 2009, October 29, 2009, Biloxi, Mississippi.
- Characterization of a Very Shallow Water Acoustic Communication Channel*, Maritime Security Laboratory at Stevens Institute of Technology, October 5, 2009, Hoboken, NJ. (End-of-year review presentation given to ONR sponsor)
- Elements of Channel Characterization*, Maritime Security Laboratory at Stevens Institute of Technology, January 6, 2009, Hoboken, NJ.
- A Software-Based Approach to Communication in Underwater Acoustic Sensor Networks*, Stevens Institute of Technology, November 24, 2008, Hoboken, NJ. (Presentation used at thesis proposal defense)
- Passive Acoustic Threat Detection in Estuarine Environments*, Stevens Institute of Technology, March 28, 2008, Hoboken, NJ. (Presentation used at oral qualifying examination)
- Estimation of Passive Acoustic Threat Detection Distances in Estuarine Environments*, 153<sup>rd</sup> Meeting of the Acoustical Society of America, June 5, 2007, Salt Lake City, Utah.
- Honors:** Stanley Fellowship, September 2009 – May 2010 (tuition, fees, and stipend)  
Competitively awarded across all fields at Stevens Institute of Technology; total of 10 awards granted  
Stanley Fellowship, September 2008 – May 2009 (tuition, fees, and stipend)  
Competitively awarded across all fields at Stevens Institute of Technology; total of 8 awards granted  
Upsilon Pi Epsilon – the Honor Society in Computing and Information Disciplines, December 2006  
Technogenesis Fellowship, September 2005  
Outstanding Computer Science Teaching Assistant, May 2004  
First in Class, Summa Cum Laude, and Computer Science Departmental Honors Citation, May 2001  
Pi Mu Epsilon – the Honorary National Mathematics Society, May 2000  
Seton Hall Provost Scholarship (4-year, full tuition), September 1997

**Certification:** Sun Certified Programmer for the Java 2 Platform, May 2002

**Skills:** **Programming Languages:** Java, C++, C, Visual Basic, MATLAB, PHP, Perl, Scheme, Bash, and SQL  
**Operating Systems:** Microsoft Windows 3.1 – Vista, and Ubuntu Linux  
**Databases:** MySQL, SQL Server, and Access  
**Web Technologies:** HTML/XHTML, CSS, JavaScript, JSP, ASP, XML, XSLT, and XSL-FO  
**Design Technologies:** UML, Rational Rose, and ER diagrams  
**Version Control:** Rational ClearCase/ClearQuest and MKS Source Integrity  
**Software:** IIS, Microsoft Office, Dreamweaver, Corel Paint Shop Pro, WinRunner, Apache Tomcat, and Apache FOP  
**Hardware:** Proficient at building, upgrading, and troubleshooting Intel and AMD-based PCs

**Experience:** **Stevens Institute of Technology**, Hoboken, NJ

Research Assistant

08/05 – Present

- Extend OMNeT++ with an underwater channel model implemented in MATLAB and exported as a shared library
- Design and implement a configurable acoustic software modem in Java/C that integrates with the sockets interface for easy deployment of network applications
- Characterize the Hudson River estuary as a communications channel by generating the scattering function and all derived views
- Build PC104-based computers for use in an underwater sensor network
- Research diver detection using passive sonar

Teaching Assistant

01/03 – 05/04; 08/07 – 12/07

- Created syllabus, chose required textbook and supplementary materials, and devised and graded assignments for a new course in concurrent programming in conjunction with my adviser (Fall 2007)
- Taught object-oriented software design and programming techniques (Spring 2003), introduction to computer science (Fall 2003), and data structures and algorithms (Spring 2004) under the guidance of the professor
- Led recitation sessions, held office hours, and devised and graded assignments

**Cargo Manager Systems**, Union, NJ

Web Developer Consultant

10/07 – 10/08

- Enhanced n-tier web applications (JSP/XHTML – Java beans – JDBC) that manage imports, exports, transportation, and warehousing for the supply chain industry
- Modified functionality of a web application that performs government filing of import shipments

**Syncsort Incorporated**, Woodcliff Lake, NJ

Associate Software Engineer

06/04 – 08/05

- Enhanced DMExpress, an application for sorting, aggregating, copying, joining, and merging extremely large quantities of data
- Utilized MFC to add new front-end features
- Developed back-end infrastructure in standard C++ to run DMExpress tasks in parallel
- Wrote and executed WinRunner scripts to ensure program stability
- Created Perl and Bash scripts to facilitate source code management procedures

**KPMG LLP**, Montvale, NJ

Programmer Analyst

10/02 – 12/02

- Debugged, maintained, and enhanced KPMG/Link Enterprise, an application that manages expatriate employees and related tax issues
- Performed and tested software builds

**Prudential Financial**, Iselin, NJ

Web/Application Developer

07/01 – 07/02

- Worked in a team to develop an award-winning application for content management and desktop publishing using ASP 3.0
- Developed a Visual Basic tool that tests the business logic of asset allocation software written in XML
- Designed and coded an ASP 3.0 user interface for Asset Allocation Online, a web application that enables a client to perform his or her own asset allocation by answering questions over the Internet
- Redesigned a series of web pages that contains the monthly performance review and daily unit values of variable life insurance products

**ADP**, Roseland, NJ

Web Developer Co-op

06/00 – 08/00

- Created an intranet site for the PCPI - Internet Payroll for the PC - department to keep all team members aware of their project's status
- Devised a JSP application that dynamically creates links to files within specific directories so that information can easily be added to the site without maintenance

**Seton Hall University**, South Orange, NJ

Software Developer

05/00 – 07/00; 05/99 – 07/99

- Provided new software for professors seeking teaching tools
- Proposed, designed, and developed a sorting algorithms demo in Java for use in the CDI - Curriculum Development Initiative - project
- Designed and developed a truth table constructor in Java for use in the CDI project

**Other Experience:** **Saint Bonaventure Church**, Paterson, NJ

Organist/Pianist/Cantor/Director of Music

11/91 – Present

**Seton Hall University**, South Orange, NJ

Assistant Organist/Cantor

09/97 – 05/01

**Memberships:** ACM, IEEE, ASA

**Interests:** Music, high fidelity stereo components, auto detailing

U.S. Citizen