Brian S. Borowski, Ph.D., CAGO

6 Wilson Ave.
Woodland Park, NJ 07424-3309
Cell: 973-768-6214
Email: brian_borowski@yahoo.com
URL: http://www.brian-borowski.com

Summary: Meticulous software engineer currently pursuing my passion to teach computer science at the college level. I have been developing software for academia, industry, and personal projects for over 25 years. Applying my diverse background, I consistently aim to present a blend of theoretical and practical instruction and teach students how to teach themselves.

Education:

Stevens Institute of Technology, Hoboken, NJ
Doctor of Philosophy in Computer Science, February 2011 (completed June 2010)   GPA 4.0/4.0
Dissertation: *Application of Channel Estimation to Underwater Acoustic Communication*
Advisor: Dan Duchamp
Graduate Certificate in Distributed Systems, January 2008
Graduate Certificate in Computer Systems, May 2007

Stevens Institute of Technology, Hoboken, NJ
Master of Science in Computer Science, May 2004   GPA 4.0/4.0
Graduate Certificate in Database Systems, January 2005 (completed May 2004)

Seton Hall University, South Orange, NJ
Bachelor of Science in Computer Science, May 2001   GPA 4.0/4.0
Minor: Mathematics

Academic Experience:

Columbia University, New York, NY
Senior Lecturer in Computer Science   07/24 – Present
Lecturer in Computer Science   07/22 – 06/24

- Teach undergraduate/graduate courses in computer science
- Serve on the Academic Committee to discuss and handle topics related to the undergraduate program in computer science
- Represent the CS department on the Committee on Science Instruction (COSI)
- Advise undergraduate students on their courses of study
- Serve on the hiring committee for lecturers
- Serve as the chapter advisor of the UPE (Upsilon Pi Epsilon) International Honor Society for the Computing and Information Disciplines

Fall 2025:	*Data Structures in Java*, COMS W3134, 2 sections
Summer 2025:	*Implementing Essential Algorithms in Java*, COMS W3995, 1 section *Advanced Programming* (in Bash and C on Linux), COMS W3157, 1 section
Spring 2025:	*Advanced Programming* (in Bash and C on Linux), COMS W3157, 2 sections
Fall 2024:	*Data Structures in Java*, COMS W3134, 2 sections
Summer 2024:	*From Algorithmic Thinking to Development* (in C/C++/Java/Python), COMS W4995, 1 section *Advanced Programming* (in Bash and C on Linux), COMS W3157, 1 section
Spring 2024:	*Data Structures in Java*, COMS W3134, 2 sections
Fall 2023:	*Data Structures in Java*, COMS W3134, 2 sections
Summer 2023:	*From Algorithmic Thinking to Development* (in C/C++/Java/Python), COMS W4995, 1 section *Advanced Programming* (in Bash and C on Linux), COMS W3157, 1 section
Spring 2023:	*Advanced Programming* (in Bash and C on Linux), COMS W3157, 2 sections
Fall 2022:	*Data Structures in Java*, COMS W3134, 2 sections
Summer 2022:	*From Algorithmic Thinking to Development* (in C/C++/Java/Python), COMS W4995, 1 section

Caldwell University, Caldwell, NJ
Associate Professor   01/22 – 07/22

- Taught undergraduate courses in computer science
- Revamped and improved the computer science curriculum, having introduced new courses to adapt to the ever-changing field
- Served as a member of the Honors Program Committee, having helped advanced students with their senior theses

Spring 2022: *Computer Programming II* (in Java), CS 196, 1 section
      Design and Analysis of Algorithms (in C++), CS 302, 1 section
      Programming Languages and Paradigms, CS 322, 1 section

Stevens Institute of Technology, Hoboken, NJ
Associate Chair of Undergraduate Education   08/17 – 07/21
Associate Director of Undergraduate Programs   07/15 – 08/17
- Scheduled all CS courses, graduate and undergraduate, with the registrar for fall, spring, and summer semesters
- Assigned assistants (TAs, CAs, graders) to faculty for both undergraduate and graduate courses
- Collected and archived all forms needed for ABET accreditation, including PCRs, SPADs, and ICEs, and wrote the annual report
- Served as the chapter advisor of the UPE (Upsilon Pi Epsilon) International Honor Society for the Computing and Information Disciplines
- Revised the academic catalog annually to accurately describe the most recent curriculum and policies of the computer science department
- Delivered presentations at various undergraduate events throughout the academic year

Associate Teaching Professor   08/19 – 07/21
Assistant Teaching Professor   08/14 – 08/19
- Taught undergraduate courses in computer science
- Taught precollege summer courses in coding, game development, app design, and data structures and algorithms
- Developed all new curricula and assignments for the courses where I was the lead instructor
- Served on the curriculum committee and "Teaching Circle" to promote excellence in the classroom
- Served as the advisor of the Computer Science Club on campus
- Advised undergraduate students on their courses of study

Summer 2021: *Systems Programming* (in Bash and C on Linux), CS 392, 1 section
      Precollege summer program

Spring 2021: *Creative Problem Solving and Team Programming* (in C/C++/Java/Python), CS 370, 1 section
      Algorithms (in C++), CS 385, 1 section
      Systems Programming (in Bash and C on Linux), CS 392, 3 sections

Fall 2020:   *Algorithms* (in C++), CS 385, 5 sections

Summer 2020: *Systems Programming* (in Bash and C on Linux), CS 392, 1 section
      Precollege summer program

Spring 2020: *Creative Problem Solving and Team Programming* (in C/C++/Java/Python), CS 370, 1 section
      Algorithms (in C++), CS 385, 1 section
      Systems Programming (in Bash and C on Linux), CS 392, 2 sections

Fall 2019:   *Algorithms* (in C++), CS 385, 5 sections

Summer 2019: Precollege summer program

Spring 2019: *Introduction to Computer Science* (in Python), CS 115, 2 sections
      Creative Problem Solving and Team Programming (in C/C++/Java/Python), CS 370, 1 section
      Algorithms (in C++), CS 385, 1 section

Fall 2018:   *Introduction to Computer Science* (in Python), CS 115, 2 sections
      Algorithms (in C++), CS 385, 2 sections

Summer 2018: Precollege summer program

Spring 2018: *Introduction to Computer Science* (in Python), CS 115, 2 sections
      Creative Problem Solving and Team Programming (in C/C++/Java/Python), CS 370,
      1 section
      Algorithms (in C++), CS 385, 1 section

| Fall 2017: | *Introduction to Computer Science* (in Python), CS 115, 2 sections |
| | *Algorithms* (in C++), CS 385, 2 sections |

| Summer 2017: | *Algorithms* (in C++), CS 385, 1 section |
| | Precollege summer program |

Spring 2017:	*Introduction to Computer Science* (in Python), CS 115, 2 sections
	Creative Problem Solving and Team Programming (in C/C++/Java/Python), CS 370, 1 section
	Algorithms (in C++), CS 385, 1 section

| Fall 2016: | *Introduction to Computer Science* (in Python), CS 115, 2 sections |
| | *Algorithms* (in C++), CS 385, 2 sections |

| Summer 2016: | *Algorithms* (in C++), CS 385, 1 section |
| | Precollege summer program |

Spring 2016:	*Introduction to Computer Science* (in Python), CS 115, 2 sections
	Creative Problem Solving and Team Programming (in C/C++/Java/Python), CS 370, 1 section
	Algorithms (in C++), CS 385, 1 section

| Fall 2015: | *Introduction to Web Programming and Project Development* (in HTML/CSS/JavaScript), CS 146, 2 sections |
| | *Algorithms* (in C++), CS 385, 2 sections |

| Summer 2015: | *Algorithms* (in C++), CS 385, 1 section |
| | Precollege summer program |

Spring 2015:	*Introduction to Computer Science* (in Python), CS 115, 1 section
	Creative Problem Solving and Team Programming (in C/C++/Java/Python), CS 370, 1 section
	Algorithms (in C++), CS 385, 1 section

Fall 2014:	*Introduction to Computer Science* (in Python), CS 115, 1 section
	Introduction to Web Programming and Project Development (in HTML/CSS/JavaScript), CS 146, 1 section
	Algorithms (in C++), CS 385, 1 section

Bergen County Academies, Hackensack, NJ
Teacher of Computer Science Technology   09/11 – 07/14
- Taught a variety of computer science courses to advanced high school students
- Developed all new curricula, selected textbooks and supplementary materials, and created and graded labs, quizzes, and tests
- Led after-school tutoring sessions
- Served as the advisor of the Computer Science Club and led after-school enrichment sessions
- Implemented auto-grader shell scripts to help students determine the correctness of their lab assignments
- Taught number theory, algebra, and problem-solving skills at the summer math camp program

2013-2014:	*AP Computer Science A* (in Java), full year
	Data Structures (in Java), full year
	Introduction to Computer Science (in Python), full year
	Java Programming, full year
	Linux Shell Programming, 1 trimester
	Pre-AP Intro to Computer Science (in Java), 1 trimester
	Math camp summer program

2012-2013:	*AP Computer Science A* (in Java), full year, 2 sections
	Programming I (in Python), full year
	Open Source and Mobile App Development (in Java), full year
	System Support and Maintenance (in Bash and C on Linux), full year
	Intro to Java, 1 trimester
	Math camp summer program

2011-2012:	*Programming I* (in Python), full year
	Open Source and Mobile App Development (in Java), full year
	System Support and Maintenance (in Bash and C on Linux), full year
	Intro to Java, 1 trimester
	Mechatronics, weekly project, full year
	Math camp summer program

Stevens Institute of Technology, Hoboken, NJ
Research Assistant   08/05 – 06/10
- Extended OMNeT++ with an underwater channel model implemented in MATLAB and exported as a shared library
- Designed and implemented a configurable acoustic software modem in Java/C that integrates with the sockets interface for easy deployment of network applications
- Characterized the Hudson River estuary as a communications channel by generating the scattering function and all derived views
- Built PC104-based computers for use in an underwater sensor network
- Researched 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 advisor (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

Industry Experience:

L3Harris Technologies, Clifton, NJ
Lead Software Engineer   09/21 – 12/21
- Reverse engineered a C++ codebase for electronic warfare to depict its architecture in UML
- Maintained the codebase and drafted manuals that explain the product's API

Thomson Reuters, New York, NY
Technical Specialist   07/10 – 08/11
- Researched and implemented natural language processing algorithms that index and retrieve related news articles in C++
- Improved the GNU Make build process (reduced build time from 30 minutes to 3 minutes)
- Added a testing framework in PHP to objectively measure the performance gain associated with various startup parameters
- Instituted nightly load testing of the application server via Hudson and Siege
- Implemented several document clustering algorithms that offer varying ratios of speed versus accuracy

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

Publications: Brian Borowski and Dan Duchamp, *Measurement-based Underwater Acoustic Physical Layer Simulation*, in Proceedings of MTS/IEEE OCEANS 2010, September 2010, Seattle, Washington.

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 153rd 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, 153rd Meeting of the Acoustical Society of America, June 5, 2007, Salt Lake City, Utah.

Skills: Programming Languages: Java, C++, C, Visual Basic, MATLAB, PHP, Python, Scheme, Bash, and SQL
Web Technologies: HTML, CSS, JavaScript, JSON, and XML
Databases: MySQL
Operating Systems: Microsoft Windows 3.1 – 11, various Linux distributions, and Oracle VirtualBox
Version Control: Git, SVN/Subclipse, and Rational ClearCase/ClearQuest
Software: Eclipse, IntelliJ, Microsoft Office, and Corel Paint Shop Pro
Hardware: Proficient at building, upgrading, and troubleshooting Intel and AMD-based PCs

Certifications: Joint NPM/AGO Organ Colleague Certification, July 2014
Colleague, American Guild of Organists, December 2013
State of NJ Standard Certificate - Teacher of Computer Science Technology, July 2012
Sun Certified Programmer for the Java 2 Platform, May 2002

Honors: 2020 Stevens Alumni Association - Outstanding Teacher Award – June 2021
    Selected by recent graduates as the faculty member who has had a major impact on their education

2018 Faculty Award Recipient for Student-Centricity – February 2019
   Selected by colleagues as the faculty member who has contributed significantly to promoting student-centricity
Distinguished Teaching Faculty Award – May 2018
   Presented at the Annual Student Awards Brunch for embodying what it means to be a student-centric professor at Stevens
Harvey N. Davis Distinguished Teaching Assistant Professor – September 2016
   Competitively awarded across all departments at Stevens Institute of Technology; 1 award granted at the rank of assistant professor
Stanley Fellowship, September 2009 – May 2010 (tuition, fees, and stipend)
   Competitively awarded across all fields at Stevens Institute of Technology; total of 8 awards granted
Stanley Fellowship, September 2008 – May 2009 (tuition, fees, and stipend)
   Competitively awarded across all fields at Stevens Institute of Technology; total of 10 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

Music Experience:

Substitute/Freelance Organist
Assist various churches in northern NJ   11/91 – Present

Corpus Christi Church, Hasbrouck Heights, NJ
Music Minister   11/24 – 9/25

Saint Michael's Episcopal Church, Wayne, NJ
Music Minister   09/23 – 11/24

Saint James of the Marches Church, Totowa, NJ
Director of Music and Organist   07/22 – 05/23

Saint Bonaventure Church, Paterson, NJ
Director of Music and Organist   11/91 – 05/22

Seton Hall University, South Orange, NJ
Assistant Organist/Cantor   09/97 - 05/01

Memberships:

ACM (Association for Computing Machinery)
IEEE (Institute of Electrical and Electronics Engineers)
AGO (American Guild of Organists)
NPM (National Association of Pastoral Musicians)

Last updated on September 28, 2025