

TIMOTHY G. WOODCOCK, Ph.D.

1001 Leadership Place
Killeen, TX 76549

Vitae

Objective

A position as an Assistant Professor in Computer Science or Information Technology that integrates the opportunity to teach and interact with students, as well as continue to research in the areas of programming languages, software reliability, and research in the teaching of programming.

Summary of Qualifications

Over 20 years of industry experience as a Software Engineer

A love of teaching with an interest in showing students how the skills they are learning fit into their future jobs

An interest with how software is developed and how to make it better

Education

Ph.D. in Computer Science at Florida Atlantic University, Boca Raton, Florida, December 1996. Dissertation topic: *Real Time Object-Oriented Design and Analysis*

MS in Mathematics (Computer Science) from Florida Atlantic University, December 1989. Thesis topic: *Software Reliability Modeling*

BA in Physics from Florida Atlantic University, March 1980

Academic Experience

2009-Present

Texas A&M Central Texas

Killeen, TX

Assistant Professor

- Classes taught include Visual Basic, Java, Database, Management Information Systems, Quantitative Concepts, Data Structures, Analysis of Algorithms, and Video Game Development
 - Introductory and advanced Visual Basic classes with an emphasis on logic and programming principles
 - Introductory and advanced Java classes with an emphasis on OOA and OOD design principles
 - Intro Database with emphasis on SQL and database design.
- Taught classes at Graduate and Under Graduate level
- Developed classes in Video Game Development and Mobile Applications
- Taught several on-line classes using Blackboard.

Dr. Timothy G. Woodcock

- Committee Work
 - Faculty Senate representative for department
 - By Laws Committee
 - Served on two different departmental hiring committees
 - Banner steering committee
 - IRB committee

2003-2009

Alfred State College (SUNY)

Alfred, NY

Assistant Professor

- Classes taught include C++, Visual Basic, Java, Object Oriented Programming, Database, Web Page development and Video Game Development
 - Introductory and advanced Visual Basic classes with an emphasis on logic and programming principles
 - Introductory and advanced Java classes with an emphasis on OOA and OOD design principles
 - C++ with an emphasis on scientific programming and solving engineering problems
 - Intro Database with emphasis on SQL and database design.
 - Web Page design with emphasis on JavaScript and web programming
- Developed classes in Software Engineering and in Video Game Development
- Taught several on-line classes using Blackboard.
- Faculty advisor for Student ACM chapter
- Committee Work
 - Faculty Senate representative for department
 - Nominations, Election, and Governance committee of faculty senate
 - Web Site committee charged with redesign of Alfred State's web site
 - Middle States Periodic Review committee
- Other classes taught to achieve department needs and objectives
 - Microcomputer Applications
 - Microcomputer Systems
 - Freshmen Experience
 - Data Structures

2000-2003

Wake Tech Community College

Raleigh, NC

Adjunct Professor

- Taught evening classes to non-traditional students
- Classes included Data Structures and several levels of Algebra

Professional Experience

1998-2003

Sony-Ericsson Inc.

RTP, NC

Senior Software Engineer

- Designed a software metrics program for the CDMA software group. Measured code metrics on over four million SLOC and process metrics for the software development process
- Used Data Mining on software metrics to model fault prone software modules.
- Developed innovative software reliability models, including capture-recapture models, NHPP (Non Homogeneous Poisson Process) defect arrival time models, and a genetic model
- Forecasted software defect occurrences using NHPP models and current defect database resulting in accurate monthly forecasts that software development managers used to balance workload and create schedules
- Designed database for collecting code and process metrics that allowed metric viewing by products, functions, or development groups
- Spearheaded global effort to standardize software metric collection
- Proposed a schema for an implementation of Rational Clear Quest for integrating four different existing software development methodologies into one unified process
- Redesigned several metrics tools into Com objects. Designed Visual Basic front-end to run these tools
- Wrote the requirements and specifications for the Failure Analysis Lab database. Designed and wrote the Failure Analysis Lab database, including the client, server, and web tools

1979 – 1998

IBM

RTP, NC

Advisory Engineer

- Implemented the Microsoft Source Code Control (SCC) API for IBM's TeamConnection software repository tool, ensuring that this worked with MS Visual C++, VisualAge C++, Visual Basic, Powerbuilder, Wallop Build-It, and other software tools
- Interfaced with IBM customers who were evaluating TeamConnection with SCC API, as part of long-term software repository tool purchase decisions. Added custom features to the SCC API to accommodate these customers' special needs
- Developed a class on using the TeamConnection Tool Builders Development Kit and taught this class to several customers
- Wrote device drivers for Server 720 for the OS/2 and SCO UNIX operating systems
- Appointed to IBM resident study program, earning a PhD in computer science
- Created metrics collection tools using C and REXX to collect metrics on Intel Assembler and C code. Performed statistical analysis on the metric data using SAS tools and neural network tools

- Proposed behavioral inheritance methodology for object-oriented real-time design methodology based on OMT
- As Project Manager for BIOS group, negotiated all schedules, plans, and requirements for software team
- Developed tools for project management and quality tracking.
- Consistently delivered products on schedule for IBM Mod 95 family of products while exceeding quality goals
- Excelled at identifying and tracking hardware, software, and schedule problems, and negotiating workable solutions
- Awarded IBM Division Excellence Award
- Performed a variety of diverse engineering positions including Project Management, VLSI chip design and verification, lead a team of software tool developers, thermal analysis mechanical design, lab automation, and manufacturing

Publications

'Neural network analysis of business data: A power tool for data mining,' IAMB Winter Conference proceedings, January 2010

'The Relationship between Object and Behavior Models,' Proceedings of the TOOLS 96 Conference, July 1996.

'An Empirical Study of Program Quality during Testing and Maintenance,' Software Quality Journal, September 1994.

'Metric Gathering Pitfalls,' Proceedings of the Annual Oregon Workshop on Software Metrics, April 1994.

'Software Reliability Model Selection: A Case Study,' International Symposium on Software Reliability Engineering, May 1991.

Research Interests

Software reliability and risk modeling

Data mining

Genetic algorithm based reliability models

Predicting reuse problems with fault prone software based on past usage and current specifications

Teaching Interests

Graduate and undergraduate programming languages

Software engineering

Data Mining

Database

Other Scholarly Activities

Presentations to student groups

Genetic Algorithm Model Building - Fall 2006

Software Engineering Positions - Fall 2005

Presentations to Faculty

Web Page development for non-programmers

Professional Activities

ACM Member - Member of SigITE and SigCSE

President of local ACM professional chapter.