Charles Dietrich
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OVERVIEW

Software Engineer specializing in web application development using Python, Java and C++.

SKILLS PROFILE

- Experience developing AJAX applications
- Research in computer vision and machine learning
- Experience mentoring programmers and managing large software projects

EDUCATION

Cornell University, Ithaca, NY
Master of Engineering in Computer Science **2005**
Thesis: Simulation of RIP routing protocol. GPA: 3.6333

Cornell University, Ithaca, NY
Extramural Student in Computer Science **2003**
Completed undergraduate requirements for computer science majors. GPA: 3.4887

Cornell University, Ithaca, NY
Bachelor of Arts in Biology **1998**
Thesis: "The effect of Barley yellow-dwarf virus on weed species"

AWARDS

- Best Compiler, CS 412, Cornell University **2003**
- Hughes Scholar, Cornell University **1995**

RELATED EXPERIENCE

netMolecules, Ithaca, NY http://www.netmolecules.com/
Software Engineer and Sole Proprietor **2006-present**

- From November 2007 to May 2008, I developed a financial application to balance cashier transactions. As the sole frontend developer, it was my task to create an AJAX application from provided SOAP APIs. The application used PHP and the ExtJS JavaScript library.
- I am working with an LA-based professional artist on a graphical, aesthetically pleasing music notation system. The application parses a music score written in MusicXML and generates images and animations based on the artist's renderings. I am developing the rendering and animation engine in Processing (a Java library).
- I have completed numerous smaller projects, including: a PHP-based website for aviation enthusiasts; extensive modifications to a FoxPro database for a Cornell client; a PHP and wordpress-based content management system for a Cornell client; and work on a Coldfusion application for a large educational survey provider.

Tompkins-Cortland Community College, Dryden, NY
Adjunct Instructor of Mathematics **2006**

- Taught developmental algebra to college-age students.
- Used collaborative learning techniques to engage students.

GrammaTech, Ithaca, NY

Software Developer **2005-2006**

- Participated in the development of CodeSonar, a static source code analysis program for C/C++ (a competitor to Coverity Prevent). In addition to builtin bugfinding capabilities, CodeSonar enables the user to write bugfinding queries. Working with a NASA contractor, I developed bugfinding queries for a NASA software application, and provided feedback on the working of the CodeSonar product to the lead CodeSonar developer.
- Presented research talk at NASA OSMA SAS Conference 2005.
- Primary developer for a new code analysis tool for the semantic web logic language SWRL. Implemented proprietary data and control flow algorithms.
- Trained end users on Grammatech products.

TelekomNet, Boston, MA **2000-2001**

Manager of Web Development

- TelekomNet.com was an ecommerce website and information portal catering to IT networking professionals. I served as the lead programmer and the manager of the development team.
- Implemented major portions of ecommerce application. Defined application user interface for many portions of the website.
- Managed a team of seven developers. Trained and mentored these developers in internet technologies and user interface design as needed.
- Worked with senior management to define project goals.

PAPERS AND PRESENTATIONS

- *"Practical Model Checking to Enforce Domain Specific Interfaces"*
  Technical Presentation at NASA OSMA SAS 2005
- *"Finding Nash Equilibria for a novel scheduling game"*
  Class project for Algorithmic Game Theory, 2004
- *"A simulation of the RIP routing protocol"*
  Thesis for M.Eng. under the supervision of Prof. Paul Francis, Cornell University, 2004
- *"Detecting multiple objects in images using segmentation and clustering"*
  Class project for Machine Learning, Cornell University, 2004
- *"Flexible Template Matching in Images using Loopy Belief Propagation"*
  Class Project for Computer Vision, Cornell University, 2003

ADVANCED COURSEWORK

- **Computer Vision**: CS 664
- **Machine Learning**: CS 478
- **Algorithms:** CS 421 Numerical Analysis; CS 481 Algorithms; CS 684 Advanced Algorithms; CS 684 Algorithmic Game Theory
- **Systems and Networking:** CS 414 Systems; CS 514 Distributed Systems; CS 519 Computer Networks
- **Compilers:** CS 412/413.

TECHNICAL SKILLS

- Python, Java, C++, PHP, Javascript, Django, HTML, CSS, XML, AJAX, MySQL, Microsoft SQL Server, Subversion, Mercurial, C#