

## COMPUTING &amp; SOFTWARE SYSTEMS

# Bits & Bytes

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## CSS Focus: Alumni Tim Hoehn

A recent graduate of the Computing & Software Systems Program, Timothy Hoehn '07 is noted for the publication of a paper discussing grid-computing – a paper based on the research he conducted for his CSS 497 Cooperative Education (Dr. Dobbs <http://www.ddj.com/hpc-high-performance-computing/202401080>). Tim co-authored the paper with his former internship sponsor Bob Ziedman from Ziedman Consulting. Currently, Tim is employed by Ziedman Consulting as a Research Engineer. Though he works for the California-based company, Tim operates out of his home office on Whidbey Island, Washington. Recently we asked Tim to answer a few questions about his research interests, career, and time spent in the CSS Program.



Tim Hoehn

### When did you first become interested in grid computing?

I became interested in grid computing when I first found out about the SETI@home project many years ago. I thought it was a fantastic idea to have

thousands of PCs around the world sharing their idle processor cycles to help achieve a central goal. I have also been interested in networking and had planned on pursuing Cisco networking certifications before getting into the CSS program at UW Bothell. Grid computing allows me to merge my interest in software development and my networking interests.

### What was your research article about?

My research revolved around discovering the best methods for and developing a grid of

computers with which to speed up the processing times of a resource-intensive application. My article discusses the tools I chose and why. It also covers the methods I used for communication and work distribution between nodes and the trade-offs of the different methods available.

### How did your research get published? What was involved?

For my project I had several milestones, the last of which was to write an article for submission to a trade publication or conference. Mr. Ziedman has had many papers published, has authored several books and believes in writing an article about any large projects he works on. I had written a lengthy research paper and software specification prior to actually writing any code, so my final paper was a natural summary of the what, why, and how of the whole project.

I was apprehensive at first about actually getting the paper published as I had never had

# Letter from the Director



*Dear Alumni and Friends of CSS,*

**G**reetings from the Computing and Software Systems Program at the University of Washington Bothell! I hope you find this edition of our program newsletter to be informing and enjoyable.

As I am writing this letter to you, two-thirds of the way through the academic year, I am reminded both of how much has been accomplished already and what interesting adventures await us. Just this last week, I attended the Winter 2008 Colloquium where our graduating seniors presented the results of their Cooperative Education projects (see accompanying article). I was struck at the time by both the high quality work presented by our students in their posters and talks and by the high level of interest being shown in our students by the members of the regional technology community. It was particularly gratifying to see among the industrial mentors and visitors several of our own alumni, who now have leadership positions in their companies.

In another opportunity to reflect on the CSS Program accomplishments, I am in the midst of writing a self-study document that is presented by the Program as part of a routine periodic program review. Preparation of such a self-study involves considerable time spent pouring over data about the program's students, faculty, staff, and resources. As I worked with the staff to prepare various graphs and tables, I kept discovering that the real success of the program is not measured so much in its statistics as in the stories of its people. These include the hundreds of CSS graduates who, over the last eleven years, have studied hard, learned well, and moved on to successful careers. They also include the many local employers, both large and small, who so value our students that they provide cooperative education sites for them and then go on to employ many of them. The CSS stories are also those of the wonderful faculty who are such accomplished teachers and scholars. Some of the longest running stories are those of our very capable staff who continue to bring our students a wide range of important services. Finally, among the CSS alumni stories, I especially thought of the many alumni who contribute to our success by counseling our students, serving as mock-interviewers, giving panel presentations, and providing us with generous financial support. Thanks to all of you for your contributions to the CSS story!

As we look ahead, I see opportunities for us in many areas. Our BA in Applied Computing degree, now in its first year, will surely grow in size and richness as the campus focuses on development of science, technology, engineering and mathematics (STEM) fields under the leadership of Chancellor Kenyon Chan and Vice Chancellor Susan Jeffords. I am also optimistic that the long awaited MS in CSS degree will enroll its first students during the 2009-10 academic year (keep watching our web site!)

Finally, it is with real pleasure that I note that Munehiro Fukuda has been promoted this year to the rank of Associate Professor with tenure. Congratulations, Munehiro, on a well deserved recognition!

**Charles Jackels**  
*Professor and Director*

## CSS Faculty Finds Biotechnology and Biomedical Technology Institute!



**Prof. Michael Stiber** is the Executive Director of the new UW Bothell Biotechnology and Biomedical Technology Institute (BBTI). Mike has partnered with Alan

Leong (UW Bothell Business Program, and a CSS adjunct faculty member) and Steve Collins (UW Bothell Interdisciplinary Arts and Sciences) to found the BBTI.

The BBTI is a resource for individuals and organizations in the region and state with an interest in the development of the biotechnology and medical device industries. It seeks to engage government and business leaders, and the citizens of Washington State, in an ongoing conversation about the future of these technologies, their implications for society, and their role in the local, state, national, and global economies. It provides a range of information, educational opportunities, and research. The BBTI also serves as a forum for scholars, business and government leaders, students, and citizens to meet, exchange information, and learn from each other, and seeks to promote UW Bothell's unique position to play a leadership role in this industry for years to come.

Though barely a year old, the BBTI is already a major success, partnering with the City of Bothell in earning Innovation Partnership Zone (IPZ) designation by the Washington Department of Community, Trade and Economic Development for development of a "Bothell Biomedical Manufacturing Corridor." The BBTI will also be hosting a Washington State Medical Device Summit on the UW Bothell campus during May.

As the Institute progresses, its impact for students will mean more educational opportunities, as well as contacts within the industry for internships and careers. Examples of educational opportunities include CSS courses that examine software development in the life science industry, and interdisciplinary electives that examine the business and social implications of these technologies.

You can find out more about the BBTI, including how you can help make it even more successful, by going to [www.uwb.edu/bbti/](http://www.uwb.edu/bbti/).

## CSS Speaker Series Continues to Grow!

Six years after a modest start as a lecture series for our students, the Computing & Software Systems Speaker Series has established itself as a community resource for information about computing technology. Joined by guest speakers from as far away as Colorado and California, lectures have brought a sense of industry experience and expertise to UW Bothell and its students. Hosting an average of nine speakers a year, the series has been well attended by students, alumni and community members.

This season, committee chair Dr. Munehiro Fukuda has focused on creating a



series that draws upon experts from a wide range of subject areas central to computing systems. The presentations have included a variety of topics from assessment of computer science education by our own faculty (Dr. Zander, "Can Graduating Students Design Software?") to discussions on the morality and design of computer games (John Nordlinger, Microsoft Research, "The Ethics of Computer Game Design") to the internal workings of commodity hardware (Dr. Hairong Kuang,

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## CSS Newsletter Gets a New Look!

The CSS Newsletter has changed! A shorter, condensed version of the newsletter will now be mailed twice a year, once in Spring and once in Autumn. This new format will allow us to bring you even more recent updates and information about what CSS is doing next! To submit ideas or alumni information, please email Megan Hunter at [meganhun@u.washington.edu](mailto:meganhun@u.washington.edu). We'd love to hear from you!

## Spotlight on CSS 497 Cooperative Education

Many know from personal experience, CSS Bachelor of Science students are required to take ten credits of CSS 497: Cooperative Education. The design of the cooperative education allows students to earn academic credit while working on a project that has potential benefits for industry or community organizations. Students typically complete the four-hundred hour project in their senior year.

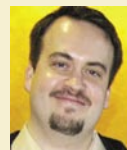
The Cooperative Education requirement is structured in a way that allows the student to choose the option that best fits his/her educational goals, with sponsored internships, current employer internships and faculty research internships being the most popular. The following is a short synopsis of what just a few recent and upcoming graduates are doing to complete their cooperative education experience.



**Corrina Barber**, "*User Centered Approach to Application Framework Development*"

Corrina led a team of User Experience Engineers and Program Managers in a user centered approach to enhancing a newly developed application framework. In order to properly influence framework changes, it was essential that the team have a solid understanding of common customer applications, components, and development strategies. An end to end storyboard was developed from key use cases, and visually

detailed the planned user experience of a prototypical end user application which fed requirements directly into the framework. Stakeholders were better able to give needed feedback, and the storyboard laid the groundwork for prototyping a final solution that would improve platform adoption overall.



**Patrick Hipps**, "*Content Management System (CMS)*"

Patrick worked with a Seattle based web group that offers custom web design and web applications. Patrick's work centered on designing and setting up administrator tools for a content management system for an organization in California. In order to design tools for the CMS, he was required to learn the current CMS systems security, caching and performance design, and database access and communication, as well as SQL and C#.



**Justin Wright**, "*Feature Enhancement for Ultrasound Image Storage*"

Justin's work centered on creating several toolkits used to store data from an ultrasound scanner into a format flexible enough to meet individual customer needs. Real-time images captured by an ultrasound scanner are traditionally either stored to a local database or saved to a standardized medical image file. Justin's internship focused on providing a means of storing multi-frame uncompressed

ultrasound images locally. In doing so, he was also able to adjust the rate of image capture, creating clearer, more accurate ultrasound image captures.



**Matthew Allen**, "*Game Development Background Optimization Tool*"

Matthew worked with a gaming company to produce an art tool that would aid video game artists in creating efficient 2D backgrounds for games that run off optimized, small-capacity ROMs. His work streamlined the artist's pipeline process through use of a GUI interface. The interface allows artists to more easily manipulate existing tile and palette data within the background image of a game, creating an opportunity for more highly detailed art in hardware limited video games.

**Dmitriy Lakhter**, "*Client BPM Application*"

Dmitriy worked for an insurance brokerage firm that had experienced recent rapid growth and expansion in its operations areas. While good for the company, this growth had created logistical problems in many areas - particularly in recruiting and interacting with strategic partners and tracking the appointment process with insurance carriers. By analyzing the problems, Dmitriy was able to integrate several software systems that allowed for better implementation of key business applications including workflow startups, WSS integration and recruitment process tracking. As user interface ability was a key issue for his company, Dmitriy chose to integrate MS Outlook as a user-friendly integration point.

### **CSS Focus Continued**

a paper published before. I had my doubts they would be interested, but I looked at the list of upcoming special issues of Dr. Dobbs and saw that a Distributed Computing special edition was coming out at about the time my paper would be written. Mr. Zeidman contacted the editor, I submitted a rough draft, and as it turned out they were very excited about publishing my paper. Getting the paper in print was probably the highlight of my academic endeavors.

### **How did you learn of your internship opportunity?**

I asked a couple of my professors if they currently had internships available. Professor Arnie Berger, who is a friend of Bob Zeidman (my internship sponsor), had just been contacted by Mr. Zeidman who was seeking a student for an internship project. I was lucky to be in the right place asking for the right thing at the right time.

### **What was it like working long distance?**

Working long distance was the best part of the whole project for me. I had weekly phone meetings with Mr. Zeidman to discuss my progress and new ideas. Since I am self-motivated and work very well alone, working long distance was easy to get adjusted to. This enabled me to work at

my own pace and get more done than if I had spent time commuting and working a set schedule. The first time I met Bob was at the poster presentations (CSS Colloquium).

### **What is your current job and how does it relate to your degree?**

My internship led to a full time employment offer from Mr. Zeidman, which I accepted. I am currently working on other similar and related projects. My employment is directly in line with my CSS degree and I have the opportunity to use all of the skills I obtained in my studies at the University of Washington Bothell.

### **Do you have plans for further research in this area?**

Right now I am starting another paper on the subject for a conference. My plan is to do more research and hopefully become an expert in the area of distributed computing.

### **What would you like to share about your time with the CSS Program?**

Getting my degree in the CSS program was the most challenging, yet one of the most rewarding things I have ever done. Hopefully I will enroll in the CSS Masters program when it begins.

### **CSS Speaker Series Continued**

Yahoo!, “Take an Internal Look at Hadoop”). The series continues to address its mission to expose students, faculty, staff, alumni, and the community to the cutting edge concepts and technologies in a range of computing fields.

In April, the series will host its 2008 keynote lecture by Dr. Pieter Tans, Senior Scientist at NOAA’s Earth Systems Laboratory. A leader in his field, Dr. Tans has also spoken out concerning the importance of scientific reports and discussion on the climate change problem being unconstrained by their implications for public policy. Dr. Tan’s lecture, “Tackling the Climate Change Problem: We Cannot Afford to Wait,” will focus on his research about the rate of carbon dioxide increase in the atmosphere, as well as its expected impact upon the global climate. His lecture, both timely and relevant to current political topics, will incorporate data on climate modeling for local, regional, and global scales. The lecture will be open to the public, though registration is requested.

For information about this and other lectures given this year, please visit the CSS Speaker Series website at [www.uwb.edu/CSS/newsandevents/speakerseries.xhtml](http://www.uwb.edu/CSS/newsandevents/speakerseries.xhtml). As the summer progresses, the Speaker Series Committee will turn its efforts to creating a 2008-09 line-up of lectures to again address current issues, needs and research within the ever changing field of computer science. We hope you will be able to attend our next lecture!



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