

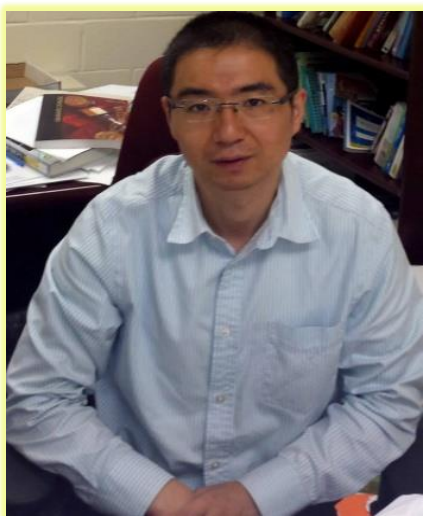


TROY
UNIVERSITY™

Computer
Science
Department
Newsletter 2013 - 2014

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### *A Note From Chair:*



#### **Dr. Bill Zhong, Chair**

The department of computer science was officially created in 2012, although the computer science program has been with Troy University since the 1970's. Since the creation, the department has grown at a very rapid rate. The enrollment, undergraduate and graduate combined, grows at 20% annually, we have since hired 4 full time

professors. Since last year, we have seen a large number of international students, particularly from India, at the graduate level and we expect this trend to continue. We have signed an agreement with a Chinese university to start a new 3+1 program and that program could potentially bring 50 to 100 students per year. Our students have been very successful in getting good paying jobs throughout the U.S. We are working with a number of local and regional employers to set up internship programs and some of them have already started to take our interns. We plan on hiring another professor in the coming year.

- Bill Zhong

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## *Dr. Vijay Mago Joins Computer Science as an Assistant Professor*

We welcome our new faculty, Dr. Vijay Mago. Dr. Mago is hailing from Punjab, India. He holds a two year post-doctoral fellowship from Simon Fraser University, Vancouver, Canada and an NIH-NSF fellowship from University of Memphis. Dr. Mago brings 12 years of teaching experience as well as 9 years of research experience to the Troy University computer science department. In the near future at Troy University, professor Mago looks forward to a growing student enrollment in the computer science department and hopes to see the creation of info structure research.



Dr. Vijay Mago, Assistant Professor

## *Graduate Students Present 'Whats Up Trojans' in Troy MathFest, 2014*

What's Up Trojans is a campus bulletin app, where the Trojan community can post events and advertisements to each other. Currently, there is a Windows computer version of this app, created using C# language and an Android phone version, created using Java Android programming tools (ADT). The app can communicate with different platforms; thus other device versions of the app can also be created without compatibility issues. The best part is that it does not need to use WiFi or cellular data to send & receive posts. This app received a lot of praise and appreciation at Troy Mathfest.



'Whats up Trojan' Team, from left to right:  
Derek Martin, Jacob Libin, Dr. Karen Hovsapien, Hien, Ilaa Rana and Dr. Suman Kumar

## *Landan Peters Wins Most Outstanding Senior Award*

Our student, Landan Peters, won Dennis Lee Bowden Computer Science Award (most outstanding senior in CS program). His all-round performance as a student also earned him a place in Troy University Wall of Honor, Phi Kappa Phi Honor Society, Alpha Lambda Delta Honor Society. He interned in CGI, an IT consultancy company in 2013 and company rewarded his hard work by offering him a full time position.



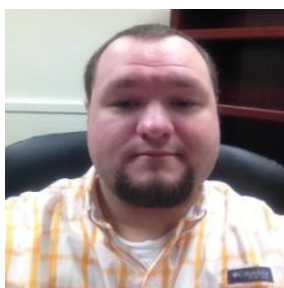
## *Our Alumni in Their Own Words*

### **CHASE RUSHING** Software Developer at Amazon, class 2005

Chase took a bit of time from his busy schedule to share with the club his experiences in college and since then in the software industry. He shared with us the secret to his success, hard work and a genuine passion for technology. He also gave us a few inside looks at what it's like to work at one of the largest tech companies in the world. He told us it was relatively laid back and not as punishing as most people are afraid of. He also shared some of the awesome perks of working for a company like Amazon, great pay and benefits, free bus pass for Seattle, and access to some of the best food courts in the city.



### **RYAN ARMSTRONG** Software Developer at Cape Fox Government Services, class 2013



“Currently, I am working on building a web based survey & reporting application for the military. I first developed my interest in Computer Science while I was working on a grant proposal project. I would highly encourage people to take group projects more seriously because even though the programming skills may differ slightly from what you will use in your career, learning to work with a development team is an absolutely crucial skill to being successful.”

## *From Our Interns*

### **Kevin Bishop** Intern at CGI, Alabama, Summer 2014

“As an intern at CGI, I was put in the position of a software tester for the CACS 9.1. As of now, I am still in the automated testing process. This internship has given me an opportunity to enhance my computer science skills and has also granted me a stepping stone to a career in the future.”



### **Sunny Sharma** Intern at Hevelett Packard, California, Summer 2014



“It was a wonderful experience working as an intern with HP's(Palo Alto, CA) R&D team. I have participated in HP's summer intern fair and showcased my work there. Apart from work, we had several BBQ parties, games, and fun activities during my 6 week internship. The welcome party was awesome. The best part of this internship was that my mentor thought Troy University prepared me well for the intern work. It really makes me feel proud to be a Trojan!”

### **Richard Clinton Seales** Intern at Intel, California, Summer 2014

“In Intel, I studied the energy efficiency of web applications and wrote a paper describing my findings. I also created an application that parsed and graphed Intel profiling tool data, and I prototyped a smart-devices idea. The overall experience was excellent, and I encountered many friendly people.”



## *Visiting Research Scholar From China*

**Dr. Haibing Li**, a Professor at Hainan teachers teaching worked at Troy University as a research scholar in year 2013- 2014. Dr Li's interests are in Artificial Intelligence, control theory and intelligent image. Formerly, he also worked at Center at the University of Zurich, Switzerland, as a visiting scholar and at Japan Institute of Intelligent Image Ritsumeikan University as a visiting scholar.



## *Scholarly Activities*

Our faculties have published **more than 10 scholarly articles** in peer reviewed conferences and journals in year 2013 – 2014. Computer Science department has been involved in research on variety of topics that include High Speed Networks, Data center networks, Health informatics, Data Analysis, Machine learning, Bioinformatics and Optimization.

**Trojan Advanced Computer Knowledge and Network (TrackNet)** research group is founded by Dr. Suman Kumar. The focus area of this research group is on Computer Network, knowledge discovery and data science. Currently, there are three faculties, 10 graduate and 2 undergraduate students in TrackNet.

## *Computer Science offers a minor in Cyber Security*

Troy University offers an inter-disciplinary minor called cyber security developed between the Criminal Justice Development and the Computer Science department. The minor focuses on digital forensics including computer forensics. Students seeking the minor in Cyber Security must be admitted to Troy University.

## *New Graduate Courses in Computer Science*

**Machine Learning** course covers key algorithms in supervised, unsupervised, and reinforcement learning, such as Kernel Methods, Bayesian Networks, Hidden Markov Models, K-Means, etc. The course will also address key concepts and challenges in Machine Learning, such as the bias-variance tradeoff, generalization, regularization, boosting, etc. The course is project-based, with a focus on application in computational biology/bioinformatics.

**Wireless & Mobile Networks**, This course discusses the principles behind Wireless and Mobile Networks. This course will discuss research challenges and state of art approaches in architecture, technologies, protocols, MAC, Routing, Transport, and Simulation & Performance Evaluation of wireless networks.

**Intro To Bioinformatics**, This course will introduce students to bioinformatics – the area concerning the development and application of computational methods to address key problems in biology. Topics covered in this course include, Introduction to biochemistry and molecular biology – molecules, proteins, DNA, RNA, Protein sequence alignment and database search.

## Faculty Seminars/Research Presentation

**Dr. Hyung Jae (Chris) Chang**, a graduate of The University of Texas at Dallas, gave a research seminar on "High Performance Packet Switch Architectures". His research is focused on the ways to improve switch capacity by proposing new switch architectures: contention-tolerant crossbar (CTC(N)) switch, Mesh of Trees based switch architecture (MOTS(N)) and their variations. As a result, the work introduced in the presentation shows unique and distinguished high performance switch architectures that can be potential candidates for next generation Internet. The major contribution of the study is to introduce several high performance switch architectures that don't require any centralized arbitration process while achieving high performance.



**Dr. Yanjun Zhao**, a graduate of Georgia State University gave a research presentation on "Image Compression Techniques". She proposed a novel image compression algorithm based on multi-resolution Discrete Cosine Transform (DCT). Her algorithm eliminates the blocking artifacts, has excellent energy compaction property, achieves multi-resolution analysis, and is ideal for parallel computing. Compared with wavelet that has been widely used in image compression, her algorithm has higher computation accuracy and requires less computation time.



## Computer Science Club

**CHARLES WOMBLE** (PRESIDENT, RIGHT): "The Computer Science Club has really started to bloom in the past few years, with more students than before. In addition to our other activities we now regularly have internship workshops where we discuss about how to get an internship and how to make a effective resume. I am really proud that the club members have been really working as a group."



**SAHIL HAMAL** (VICE-PRESIDENT, LEFT): "I was always interested in Technology, so I knew that Computer Science is the best field for me. It is always a tough act to study abroad, but Troy University has welcomed me with great CS faculty and exciting curriculum. Even though I am from a foreign country (Nepal), I am enjoying every aspect of my college life and I also believe that the Troy's education will prepare me for the world beyond graduation."

## Computer Science Club in Pictures



Computer Science Club hosted a few game nights



### Computer Science Club Officers:

from left to right, Sahil, Kevin, John(back), Kevin, James(front), Mathew, Charles, Miranda



A Random day in Computer Science club meeting

### Newsletter Credit:

Sahil Hamal (Chair), Austin Cofield, Miranda Tait, Matthew Sanders, Kevin and Dr. Suman Kumar ( Advisor of CS Club and Newsletter Committee)

# Computer Science Donation Form

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Or, you can donate directly online at <http://donate.troy.edu/giving-search>. Type "Computer Science Department" in Fund Description Field. Click on Search, Click Computer Science Department.

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