Message from the Department Chair

The Department of Computer Science at Howard R. Hughes College of Engineering, UNLV invites you to explore our curriculum, which offers Bachelor, Master, and PhD degrees in Computer Science. Our courses are periodically updated to reflect the changing nature of computer science and information technology. Such courses are selectively embedded to develop specialized programs and concentration areas.

Our BS program, accredited by ABET, is targeted to students who plan to become proficient in problem solving and programming. Students in the BS program go through a rigorous exposition into the core and advanced areas of computer science and programming. The BA program is designed to give adequate skills in computer science fundamentals and to focus on applying such skills to other areas including business, biology, psychology, arts, and the humanities. The department offers optional concentration areas in both the BS and BA programs. By completing selected additional courses, students can obtain certification in concentration areas. At present the available concentration areas are (i) Software Engineering, (ii) Computer Networks, and (iii) Information Assurance.

Our graduate programs, leading to MS and PhD degrees, are designed to pursue research at the frontiers of computer science and application areas. The graduate program is supported by faculty who are actively participating in research and development in specialized areas such as algorithm analysis, database systems, document image processing, scheduling, computational geometry, computer security, parallel programming, programming languages, and multi-media. Four in-house computer laboratories support teaching and research activities.

To meet the changing nature of Information Technology (IT) and Computer Science, the department has recently introduced several new courses in the undergraduate curriculum that include (i) CS443 Information Assurance, (ii) CS559 Digital Forensics, (iii) CS495 Senior Project Development I, and (iv) CS496 Senior Project Development II.

We take the suggestions given by our stakeholders very seriously and incorporate their recommendations to enhance our programs and curriculum.

Dr. Laxmi Gewali
Chairman and Professor, Computer Science Department
Howard R. Hughes College of Engineering
Minor in Unmanned Aircraft Systems

The Howard R. Hughes College of Engineering is excited to announce a new, interdisciplinary minor degree in unmanned autonomous systems (UAS) that began in Fall 2014. With UNLV’s proximity to accessible airspace this minor creates an ideal setting for learning Unmanned Autonomous Systems (UAS). The minor degree will provide the necessary background for students to apply their majors for applications in unmanned surveillance, data collection, and autonomous operations. The courses will consist of key engineering and computer science courses related to UAS technologies, UAS privacy and UAS pilot training.

How to enroll
Students entering this minor program must have engineering majors or computer science. Students with science and math majors need to contact the program coordinator for guidance. Students must apply at least two semesters prior to graduation, and need to be approved by the minor program coordinator.

Course Requirements
Students must complete 9 credits of UAS core courses and 12 credits of elective courses in the following specialty tracks. No more than nine(9) credits can be counted towards major degree.

UAS Core Courses (9 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EGG 370</td>
<td>UAS Design and Applications</td>
<td>1</td>
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<tr>
<td>EGG 470/670</td>
<td>UAV Simulation and Testing</td>
<td>2</td>
</tr>
<tr>
<td>LAW 432</td>
<td>Privacy, Publicity &amp; Defamation</td>
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Specialization Tracks (12 credits)

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<tr>
<th>Specialization Track</th>
<th>Elective Courses</th>
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<tr>
<td>Autonomous System Design</td>
<td>ME 110, ME 482, ME 242, ME 425, ME 380, ME 421 or EE 370, ME 465, EE 475</td>
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<tr>
<td>Control</td>
<td>EE 360, EE 472, EE 370, EE 475</td>
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<tr>
<td>Communication</td>
<td>EE 360, EE460, EE 361, EE 466, EE 432, CPE 400</td>
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<tr>
<td>HCI (Human-computer Interaction)</td>
<td>CS 135, CS 482, CS 351, CS465, CS 420, CS479</td>
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Specialization Track Elective Courses

UNLV ACM Programming Team for 2014

UNLV ACM is the local student chapter of the Association of Computing Machinery. Founded in 1947, the ACM is considered one of the largest and most prestigious science and education societies. UNLV ACM focuses on sharpening students programming skills in weekly on-campus meetings. At these gatherings, participants pose challenging programming problems, coding discussions and mathematical exercises. Details of UNLV ACM can be found at http://www.unlvacm.com.

This year three teams from UNLV ACM headed to the ACM regional programming competition in Riverside, CA. Jimi Andro Vasko, a UNLV PHD graduate student, is the coach of the team. Dr. John Minor is the faculty sponsor of the chapter. Students are highly encouraged to join UNLV ACM. For further information contact UNLV-ACM chapter president Omar S. Navarro Leija (navar106@unlv.nevada.edu)

Team 1
Omar S. Navarro Leija
Austin Ross
Alex Park

Team 2
Chelsea Bhadra
Scott Hale

Team 3
Raul Collazo
Stanley Zeng
Sanju Varghes

Coach: Jimi Andro Vasko
Faculty Spotlight on Dr. Andreas Stefik

Dr. Stefik’s research is in the broad areas of software engineering and computer programming languages, where he focuses on the problem known colloquially as the “programming language wars” or the idea that many technologies exist and that few rigorously scientific standards exist for evaluating them. His work has led to the first evidence-oriented programming language called Quorum, the design of which is based on rigorously collected empirical data with human users. The National Science Foundation, Microsoft, and several educational institutions, including a Washington State School and the University of Washington, have funded Dr. Stefik’s work. He won the 2011 Java Innovation award for creating Sodbeans, an integrated development environment to make it easier for blind children to invent their own technologies.

Recently, Dr. Stefik’s work has led to fundamental changes in our understanding of computer programming languages and technologies. His work provides the first scientific approach for measuring, and evaluating how syntax, type systems, and other aspects of language design impact programmers in practice. Most recently he has worked on neurophysical models of the human brain to better understand the role of expertise in programming technologies.

Dr. Stefik awarded NSF grant

The National Science Foundation announced in August 2014 that Dr. Stefik was the winner of AccessCS10k project. Dr. Stefik will be using the Quorum programming language to increase participation of student with disabilities in K-12 education. The amount of the award is $474,695 and the duration of the project will be three years starting September 1, 2014. The project will be instrumental in building the capacity of Exploring Computer Science (ECS) and Computer Science Principles (CSP) to high school teachers to serve students with disabilities through professional development training and individual real-time support.

Selected Recent Publications

Alumni Spotlights

Chris Wolverton, Lead Software Engineer, Onpoint Consulting

Chris Wolverton (BS 2011, MS 2014) has 10 years of experience in developing software. His programming skills are on Java, Web stack, Hadoop for Big data processing, .NET, python, open MPI, processing framework for Visualization, and RDMS (Oracle, MySQL, POSTGRESQL).

He is currently working as lead Software Engineer with onpoint consulting. His responsibilities include (i) managing the direction of software development, (ii) full stack software development, and (iii) Big-Data Analytics. His team is working to build data warehousing and Big-data Analytics on top of Hadoop.

A few questions with Chris:

So many platforms are available for developing Java programs, which ones are you using the most?
I have used Eclipse, Visual Studio and NetBeans. Lately, I have been using NetBeans the most.

In your opinion, which programming language is suitable for learning programming?
One should be exposed to different paradigms of programming. Primarily, I use Java for most backend development. Java is not suitable for all kinds of problems. To prototype and to verify algorithms, languages like python or Ruby are excellent to focus ‘task-on-hand’ rather than plumbing.

What is your plan for the future?
Implement machine learning techniques in conjunction with Hadoop based applications. Take some ideas from my swarm routing MS project and apply them on real mini-drones.

Mahesh Raj Regmee, Implementation Specialist, Verisk Health

Mahesh Raj Regmee recently joined as an Implementation Specialist at Verisk Health, a leading software provider that deals with healthcare data. With his new role at the company, he will be responsible in designing a scalable and robust framework that supports terabytes of data generated by healthcare providers. Before joining UNLV, he worked as a Team Lead at Verisk Health where he was part of in-house ETL development group. Under his leadership, various clients were implemented in ORACLE/JAVA-JSF platform. He is a professional certified scrum master. His research/development areas include Big Data analysis, Distributed File Systems, and Multi-core computing.

A few questions with Mahesh:

Why did you decide to study at UNLV after working for four years in the high-tech sector?
After getting my undergraduate degree in CPE, I thought I needed some professional experience for a few years and joined the nation’s top IT company Verisk Health Information Technologies. After working for four years in this company, I realized the need of going through a formal academic exposure to learn the foundation of emerging areas of Data Mining/Analysis and Distributed/Multi-Core Computing. With these expectations, I joined UNLV as a graduate student and I had the privilege of working as a graduate assistant. My days in UNLV were very productive and I learned so many formal and emerging topics in distributed computing.

What would you suggest to students who want to succeed in your field?
My personal suggestions are: (i) decide your career goal, (ii) learn technologies that draw your natural interest, (iii) learn and practice programming skills in at least three programming languages, and (iii) get connected with your peers.

What is your future plan?
I will work for a few more years and get a better understanding of how a typical software company runs. I will utilize my knowledge that I gained at UNLV while working in the real software industry. Eventually, I am thinking of initiating a startup company (in collaboration with my friends) that will benefit society as whole.