

LARA B. DEEK

PERSONAL

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PROFILE

Critical thinker, self-motivated, hard-working, active, and conscientious. Excellent communication skills.

EDUCATION

(1994- 2004)
IB Certificate

Sagesse High School, Lebanon
International Baccalaureate (IB)
Honor List, Rank 1

(2004-2008)
Bachelor in
Engineering

American University of Beirut, Lebanon
Computer and Communications Engineering
Dean's Honor List

(2008 – present)
PhD

University of California Santa Barbara, USA
Computer Science
Expected graduation date 2013

PUBLICATIONS

- L. B. Deek, K. Almeroth, M. Wittie, and K. Harras. "Exploiting Parallel Networks Using Dynamic Channel Scheduling." *Fourth International Wireless Internet Conference (WiCon)*, Maui, Hawaii, November 2008.
- L. B. Deek, S. Thoubian, S. Jamijian, K. Harras, and H. Artail. "Exploiting Parallel Networks in Intermittently-Connected Mobile Environments." *IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob)*, Avignon, France, October 2008.

PROJECTS

- Understanding the performance of TCP variants via NS2: Analyzing the performance of different TCP variants under various load conditions and queuing algorithms using the NS-2 network simulator.
- Performing end-to-end Internet measurements using PlanetLab: experimenting with PlanetLab and gathering first-hand measurements of the Internet from a global perspective to evaluate on a rough granularity the types of unexpected and abnormal behavior first observed in V. Paxson's "End-to-End Routing Behavior in the Internet".
- Digital Systems Design, "ALU and Sequential Multiplier": Implementing and Simulating an Arithmetic/Logic unit and a sequential multiplier that performs integer and Boolean operations using VHDL.
- Computer Organization, "Pipelined MIPS Processor": Implementing and simulating a pipelined multi-cycle MIPS microprocessor with support for forwarding and hazard detection using VHDL.
- Data Structures and Algorithms, "Prisoner Records": Implementing a program or database for jail records of prisoners and visitors which are subject to dynamic changes using C++.
- Signals and Systems, "Filters": Filtering sounds and images as well as studying the effects of and eliminating noise and distortion from signals using MATLAB.
- Operating Systems, "TLB": Implementing a software emulation of a TLB (Translation Look-aside Buffer) and studying its effectiveness.
- Digital Lab, "Digital Thermometer": Building and implementing a digital thermometer using a PIC.
- Electronics II Lab, "Audio Amplifier": Designing an audio amplifier using PSPICE and building it on a PCB.
- Computer Architecture, "Tomasulo's Algorithm": Implementing a C++ program that simulates Tomasulo's Algorithm.
- Computer Graphics, "Pipe Dream Clone": Implementing a pipe game on C++ using graphic primitives of OpenGL and callbacks for user interaction.
- Computer Graphics, "Animate Height-Map Terrain Generation": Generating terrain based on height-maps that are determined by the pixel values of an image, and then creating an animation to morph between different terrains.
- Computer Graphics, "Collect the Olives": Implementing a 3D game in OpenGL; the purpose of the game is to collect as many olives as possible from various trees (to be implemented as a final project).
- Algorithms, "Chess game": Implementing a chess game using *Negamax* approach to determine next

available moves where each player knows everything about the possible moves of an adversary.

- Internet Security, "Port Scanner": Implementing a port scanner that scans the ports of an IP and determines open ports (using TCP SYN scan).
- Internet Security, "Port Scan Detector": Implementing a port scan detector which detects potential port scans based on two thresholds: the time between attacks and the number of ports scanned.
- Internet Security: Detecting and protecting Linux system against external attacks (using methods and programs such as SNORT, Firestarter, APF) and preparing attack tools and methods against course members.
- Internet Security: "Network Key Cracker": Implementing a network key cracker of an LM hash using a Xilinx Virtex II FPGA with a MicroBlaze processor. The FPGA directly connects to the network to listen for password packets.

TECHNICAL SKILLS

- Operating Systems: Microsoft Windows, Linux.
- Other: Matlab, Active-HDL, Cygwin, Visual Studio.Net, PSpice, LabView, SPIM, MPLAB, Xilinx ISE, Maple.
- General Programs: Excellent at Microsoft Office (Word, Excel, Power Point, Visio...), familiar with Photoshop.
- High-Level Programming Languages: C, C++, HTML, Java.
- Hardware Description Language: VHDL.
- Assembly Languages: MIPS, PIC.
- Testbeds: Emulab, PlanetLab.
- Simulators: NS2.
- API: OpenGL.

WORK EXPERIENCE

- **Spring 2009:** Teaching Assistant in CMPSC 176A, Introduction to Computer and Communications Networks, for Professor Elizabeth Belding. I conduct discussion sections, coordinate homework assignments and grading, and hold office hours, University of California Santa Barbara.
- **Winter 2009:** Teaching Assistant in CMPSC 162, Programming Languages, for Professor Diana Franklin. I conducted discussion sections, coordinated homework assignments and grading, and held office hours, University of California Santa Barbara.
- **Fall 2008:** Teaching Assistant in CMPSC 176A, Introduction to Computer Communications Networks, for Professor Kevin Almeroth. I conducted discussion sections, coordinated homework assignments and grading, and held office hours, University of California Santa Barbara.
- **Fall 2007-2008:** Undergraduate Teaching Assistant in EECE 210, Electronics I, for Professor Riad Chedid, American University of Beirut.
- **Summer 2007:** Intern in the *Research Interns in Science and Engineering (RISE)* program for undergraduate research at the University of California Santa Barbara (UCSB). Worked on a research project in the Networking *Multimedia Systems Lab (NMSL)* with principle investigator Professor Kevin Almeroth, University of California Santa Barbara.
- **Spring 2007:** Lab assistant in EECE 230, Computer Programming for Professor Louay Bazzi. I assisted, corrected, and graded university students in their EECE 230 course-work, American University of Beirut.
- **Fall 2006-2007 and spring 2007:** Undergraduate Student Representative in the CCE Department (Computer and Communications Engineering) on the *Electrical and Computer Engineering Undergraduate and ABET (Accreditation Board for Engineering and Technology)* Committee. This committee met regularly to study student petitions, transfer applications, and issues related to the undergraduate curriculum, American University of Beirut.
- **Fall 2006- 2007:** Website Developer. I developed and maintained websites for research groups and projects, Engineering Department, American University of Beirut.
- **Summer 2006:** Undergraduate Lab Assistant in EECE 330, Data Structures and Algorithms, for Professor Ali El-Hajj. I instructed university students and evaluated programming lab-work, American University of Beirut.
- **2003-2007:** Scout Leader for teenagers in *Jeunesses Étudiants Chrétiens (JEC)*, a non-profit organization that promotes character development and values.
- **2003-today:** Tutor in all subjects, Sagesse High School, American University of Beirut.

COURSES

Circuits and Electronics:

- Electric Circuits and Electronics and lab.
- Electronics I and lab.
- Electronics II.
- Electromagnetic Field Theory.

Hardware:

- Digital Systems Design and lab.
- Microprocessor Systems.

- Computer Architecture.

Networks:

- Computer Networks and Internetworking lab.
- Advanced Computer Networks (graduate).
- Cognitive Wireless Networking (graduate).
- Social Networking (graduate).*

Software:

- Computers and Programming.
- Data Structures and Algorithms.
- Operating Systems.
- Design and Analysis of Algorithms (graduate).
- Computer Graphics.

Signals and Communications:

- Signals and Systems.
- Communication Systems and lab.

Security:

- Internet Security (graduate).
- Cryptography and Computer Security (graduate).

* in progress

LANGUAGES	
	Read, write, and speak English, French, and Arabic. Beginner in Japanese.
CERTIFICATES AND MEDALS	
	<ul style="list-style-type: none"> • 2009, <i>Google Workshop for Women Engineers</i>, University of California Santa Barbara, U.S. • 2004 – 2008, <i>Dean's Honor List</i>, American University of Beirut, Lebanon. • 2004, nominated <i>GYLC Global Scholar</i> representing Lebanon at a 2004 session for outstanding academic achievements. • 2004 <i>Student of the Year</i>, Sagesse High School, Lebanon. • 1998 – 2004, <i>Honor List</i>, Sagesse High School, Lebanon. • Gold, Silver, and Bronze medals in basketball and volleyball, Sagesse Club, Lebanon.
RESEARCH INTERESTS	
	Computer protocols, computer networks, computer architecture, performance evaluation.
OTHER ACTIVITIES AND INTERESTS	
	<ul style="list-style-type: none"> • Vice president 2008 – 2009 of the <i>Women in Computer Science (WiCS)</i> society at UCSB. • Member 2004 – 2007 of <i>IEEE</i> and <i>IEEE Women in Engineering</i>. • Official member of <i>Jeunesses Étudiants Chrétiens (JEC)</i> - a non-profit organization that promotes character development and values. • Basketball, volleyball, swimming, ultimate, hiking, skiing, and camping. • Reading, painting, learning new languages, and interacting with people from different cultures. • Music, anime, art, religion, geography, politics, and history,