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**OBJECTIVE**

Seeking a summer internship in the field of digital signal processing and communications systems design.

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**EDUCATION**

Aug. 2007 – Present	The University of Texas at Austin – Austin, USA
Master of Science in Electrical Engineering – Communications, Networks & Systems Track	
Advisor: Prof. Brian L. Evans	Expected Date of Graduation: May 2009
Sept. 2003 – June 2007	American University of Beirut – Beirut, Lebanon
Bachelor of Engineering in Computer & Communications Engineering – Minor in Mathematics	
Graduated with Distinction.	

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**SELECTED COURSES**

<b>Communications &amp; Networking</b> <ul style="list-style-type: none"><li>• Communication Systems</li><li>• Communications Laboratory</li><li>• Computer Networks</li><li>• Digital Communications (<i>Graduate</i>)</li><li>• Wireless Communications (<i>Graduate</i>)</li><li>• Wireless Communications Lab (<i>Graduate</i>)</li><li>• Multimedia &amp; Networking (<i>Graduate</i>)</li><li>• Probability &amp; Stochastic Processes (<i>Graduate</i>)</li></ul>	<b>Signal &amp; Image Processing</b> <ul style="list-style-type: none"><li>• Control Systems</li><li>• Digital Signal Processing (<i>Graduate</i>)</li><li>• Multi-Dimensional DSP (<i>Graduate</i>)</li><li>• Real-Time Digital Signal Processing Laboratory</li><li>• Signals &amp; Systems</li></ul>
<b>Mathematics</b> <ul style="list-style-type: none"><li>• Applications of Analytical Methods</li><li>• Discrete Structures</li><li>• Real Analysis</li><li>• Linear Algebra</li><li>• Advanced Probability &amp; Random Variables</li><li>• Probability &amp; Statistics in Engineering</li></ul>	<b>Computers &amp; Hardware</b> <ul style="list-style-type: none"><li>• Computer Architecture</li><li>• Computer Organization</li><li>• Digital Systems Design</li><li>• Digital Systems Laboratory</li></ul> <b>Software &amp; Programming</b> <ul style="list-style-type: none"><li>• Computers &amp; Programming</li><li>• Data Structures &amp; Algorithms</li><li>• Software Engineering</li></ul>

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**SKILLS**

<b>Algorithm Development Environments</b>	LabVIEW, MATLAB
<b>Assembly Languages</b>	TI TMS320C6000 VLIW DSP, PIC16F84, MIPS R2000
<b>Databases</b>	SQL
<b>Electronic Design Automation Tools</b>	PSpice, ModelSim, Sonata, Xilinx, OrCAD
<b>Hardware Description Languages</b>	Active HDL, VHDL
<b>High-Level Languages</b>	C, C++, C#
<b>Network Simulation Tools</b>	OPNET IT Guru
<b>Office Tools</b>	Photoshop; Microsoft Visio, Project & Office Suite
<b>Radio Network Planning Tools</b>	Ericsson's TEMS Cell Planner Universal, ATDI's ICS Telecom
<b>Software Development Environments</b>	TI Code Composer Studio, Microsoft Visual C++, Microsoft Visual Studio 2005, MPLAB IDE Microchip Programming
<b>Standards Implemented</b>	v.22bis Transceiver for Voiceband Modem
<b>Test &amp; Measurement Tools</b>	Signal Generators, Oscilloscopes, Spectrum Analyzers, LabVIEW

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**WORK EXPERIENCE**

Fall 2007 – Present	The University of Texas at Austin – Austin, USA
Teaching Assistant – Real-Time Digital Signal Processing Laboratory	
<ul style="list-style-type: none"><li>• Conduct two weekly lab sessions to introduce lab theory,</li></ul>	

- Assist students when performing experiments,
- Grade lab reports and hold office hours.

Summer 2006

German Aerospace Center, DLR - Munich, Germany

Internship – Institute of Communication & Navigation

- Implementation and simulation of cellular interference for MC-CDMA,
- Implementation, testing and comparison of time of arrival (ToA), time difference of arrival (TDoA), linear Kalman filter (KF) and non-linear Extended Kalman filter (EKF) algorithms in MATLAB for cellular communications systems based tracking for 2-D and 3-D navigation,
- Comparison of Gauss Newton and MATLAB optimization routines for position determination.

#### SELECTED PROJECTS

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Fall 2007 - Present

Conducted research on the topic of wireless sensor network synchronization using WWVB, an already available time signal that is used to synchronize watches across the nation. A transmitter/receiver pair was implemented in LabVIEW.

Fall 2006 – Spring 2007

Final year project entitled “NS2-based Neuronal Communication Networks”. Considered neural networks at the system level by modeling neurons as nodes representing Poisson processes and examining communication among groups of nodes.

December 2006

Conducted research on the topic of one way delay estimation in computer networks. The project included an extensive review of the available literature, choosing two estimation techniques and implementing them over the internet by designing an application using the TCP/IP socket interface in C++ to collect network timestamps. The data was exported to MATLAB where the estimation models were applied and the results were analyzed and reported.

November 2006

Developed a system level simulator for the UMTS cellular system to test and analyze various design issues such as interference calculation, power control, mobility and soft handover. The project was implemented in MATLAB and included the design of a GUI. A random mobility model was also developed to represent the realistic movement of users.

May 2006

Designed an application using the UNIX UDP/IP socket interface in C++ that implements a streaming video client/server model that communicate using Real-Time Streaming Protocol (RTSP) and send data using Real-Time Transfer Protocol (RTP).

December 2005

Designed, implemented and tested an Amplitude Modulated (AM) Radio Frequency Transmitter/Receiver system by simulating the circuit in PSpice and building it on a breadboard.

August 2005

Designed, implemented and tested a v22.bis transceiver for a voiceband modem by simulating the system in LabVIEW, developing algorithms in MATLAB, and programming a Texas Instruments digital signal processor starter kit board for real-time performance.

May 2005

Designed, implemented and tested a 16-bit calculator by programming and interfacing a Microchip PIC16F84 microcontroller to a hex-keypad and an LCD display.

#### AWARDS & HONORS

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Fall 2007

The University of Texas at Austin – Austin, USA

UT Cockrell School of Engineering Doctoral Fellowship

Fall 2003 – Fall 2006

American University of Beirut – Beirut, Lebanon

Dean’s Honor List

December 2006

Nicolas George Saab Foundation – Beirut, Lebanon

The Nicolas George Saab Scholarship

#### AFFILIATIONS

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Sept. 2003 – Present

Institute of Electrical & Electronics Engineers (IEEE)

#### PERSONAL

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- **Citizenship:** United States of America
- **Languages:** English, French & Arabic (All Fluent)
- **Hobbies:** Soccer, Basketball, Rollerblading, Darts & Billiards.

#### REFERENCES

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Available upon request.