

NIELS JOUBERT

Berkeley, CA 94704 • (650) 823-1662 • njoubert.blogspot.com • niels@berkeley.edu

EDUCATION

University of California, Berkeley (2005 – present, Berkeley, CA.)

B.Sc. Honors in Electrical Engineering and Computer Science, expected graduation: May 2009.
Cumulative GPA: 3.85 (Aug 2005 - current)

Los Altos High School, Grade 12 (2005, Los Altos, CA)

Graduated Valedictorian, Cumulative Unweighted GPA: 4.0

Paul Roos Gymnasium, Grade 8 – 11 (2001 – 2005, Stellenbosch, South Africa.)

Best scholar 4 semesters running, Cumulative grade: 108%

SKILLS

Software Development using C, MIPS assembly, Java 5 & Junit, CVS/Subversion and Scheme.

Web Development using RubyOnRails, PHP, JavaScript, XML, HTML, CSS and AJAX techniques.

Network Programming implementing, analyzing and using network protocols, especially TCP/IP.

Rapid Prototyping combining technologies to create innovative and interesting prototypes.

Skilled in object-oriented, functional, event-driven and MVC programming paradigms.

Ability to develop in Windows, Linux and Solaris environments using Emacs and Eclipse.

Strong and recognized interpersonal and verbal/written communication skills.

PROJECTS

Red5 Flash Video Server Open source flash video server supporting video streaming, remote procedure calls and shared objects. Implemented file access and indexing, REST driven on-the-fly track splicing, and several synchronized video sharing applications running on this platform.

2draw.net Online Art Community Website, focused on education and free online drawing tools.

Custom Web Server in C implemented HTTP/1.0 standard from scratch in C.

Modified TCP implementation using selective acknowledgments and TCP Vegas style congestion control to improve TCP Throughput and performance in lossy situations.

Particle Simulator using custom Quadtree data structure to enable $O(\log_4(n))$ lookup of objects, handling upwards of 10 000 data points in a real-time graphical simulation.

Software controlled robotic tripod manipulating stepper motors using software-generated impulses translated to analog signals using self-designed hardware.

WORK EXPERIENCE

Yahoo! Research Berkeley, January 2007 – January 2008: Responsible for design, implementation and integration of video-related project as research platform. Built successful prototype on this platform, which became integrated into live.yahoo.com. Contributed to location aware software and hardware prototypes, including WiFi to Location mapping systems.

Berkeley Supernova Research Team, June 2006 – present: Image analysis to detect new supernova.

UC Berkeley New Student Services, Jan 2006 – August 2006: Cal Student Orientation counselor, responsible for facilitating teams and leading groups of new freshman and transfer students through several two-day programs to acquaint them with UC Berkeley. (<http://calso.berkeley.edu/>)

TIDE Productions, Jan 2003 – Jan 2006: Involved in 5 film productions, including a DVD that was used for the successful application to the position of Conductor at the Vancouver Conservatoire.

Webmaster at Paul Roos Gymnasium, Jan 2003 – Des 2005: Web Design team leader, responsible for upgrading website and increasing traffic 10 fold. (<http://www.paulroos.co.za/>)

RELEVANT COURSEWORK	<p>CS 162 Operating Systems (In Progress)</p> <p>CS 184 Computer Graphics (In Progress)</p> <p>CS 61C Machine Structures, C and MIPS (A)</p> <p>CS 61B Data Structures and Java (A)</p> <p>CS 61A Structure and Interpretation of Computer Programs (A+)</p> <p>EE 126 Probability and Random Processes (B) covering fundamental probability laws</p> <p>EE 122 Computer Networks (A) focusing on HTTP, TCP/IP and core network protocols</p> <p>EE 120 Signals Processing (A) covering Fourier, La Place and Z Transforms and LTI Systems</p> <p>EE 40 Microelectronic Circuits (A-)</p> <p>EE 20N Signals and Systems (A) covering discrete and continuous time LTI systems and their properties</p> <p>Astro121 Radio Astronomy (A+) involving electronics, programming, signal processing and estimation/detection techniques in interferometry and mapping challenges</p>
HONORS, AWARDS & RECOGNITION	<p>07 – Elected as Industrial Relations Officer for the HKN Engineering Honors Society</p> <p>07 - Accepted into Berkeley's B.Sc. Honors Degree program</p> <p>06 - Yahoo! University Hack Day winner at UC Berkeley.</p> <p>06 - Golden Key Club nominee as a student in the top 5% of Berkeley.</p> <p>06 - Recipient of William B. Slottman Award as the best counselor for incoming students.</p> <p>05 - Chancellor's Honors for outstanding academic achievement at UC Berkeley.</p> <p>02 - Gold Medal in Expo for Young Scientists, recipient of Electrical & General Engineering prizes.</p>
INTERESTS	<p>Mountain Biking, Snowboarding, Music (Violin, Bass Guitar and DJing), Amateur Radio, Videography</p>