Dmitriy Kogan

College Address
340 E. Foothill Blvd.
Claremont, CA 91711
(909) 607-4845
dkogan@hmc.edu

Permanent Address
1221 Apache Dr.
Socorro, NM 87801
(505) 838-1216

EDUCATION

Harvey Mudd College, Claremont, CA. Candidate for a B.S. degree in Engineering and a B.S. degree in Mathematics, May 2003. Course work includes Electrical Engineering, Digital Engineering, Electronics, VLSI design, Neural Networks, Systems Engineering, Systems Simulation, Applied Analysis, Numerical Analysis, Modeling, Real Analysis, Abstract Algebra, Discrete Mathematics. GPA after six semesters: 3.5.

New Mexico Institute of Mining and Technology, Socorro, NM. Part time student 1996-1999. Course work includes Single- and multi-variable Calculus, Linear Algebra, Probability, Differential Equations, Physics. GPA after four semesters: 3.9.

WORK EXPERIENCE

Physics, Mathematics and Computers, Inc., Socorro, NM. Developed a mathematical aerodynamic model for high-speed projectiles. Implemented a numerical differential equation solver for physical simulations. Worked with code for parallel computing clusters using MPI. Created a Direct3D ActiveX control, used primarily inside physical simulation software. Programming done in C++ in UNIX and Windows environments. Part time 1996-1999, full time Summers 1999, 2000, 2001.

ACADEMIC RESEARCH

Sandia Natl Labs, Worked on a team of 4 students to develop hardware to run an Ion Mobility Spectrometer in Fourier-Transform mode. Analyzed signal processing algorithms, modeled the system in Matlab. Solution will use a DSP chip, an FPGA and a custom PCB. Fall 2002, Spring 2003.

Harvey Mudd College, Developed a mathematical model of patterns produced by diblock polymer deposition on a water surface. Both a continuous PDE-based solution and a discrete agent-based model were developed and tested. Summer 2002.

Texas Instruments, Inc., Worked on a team of 5 students to design and develop a custom GPS receiver. Solution used custom PCBs, FPGAs, MATLAB data evaluation and processing routines. Spring 2002.

Harvey Mudd College, Electrical engineering research towards development of color recognition hardware. Fall 2001.

Harvey Mudd College, Designed and developed a flow-meter to be used in medical applications. Solution used a custom-built optical sensor that transmits information to a PIC microcontroller which sends the data to a computer, which plots the data in realtime. Fall 2001.

SKILLS

Extensive experience with C++ in Unix and MS-DOS and Windows.
Extensive experience with x86 ASM programming in MS-DOS and MS-Windows.
Extensive experience with PIC assembly programming.
Extensive experience with Maple and MATLAB mathematical software packages.
Experience in development of digital and analog circuits.
Experience with SPICE, Protel, Xilinx, Latex.
Experience with machining equipment.
Fluent in English and Russian.

PROJECTS

- An M&M sorting machine (by color); uses LEDs, photodiodes for the sensor, PIC microcontroller, servo motors. Developed mechanical, electronic, sensory and software components. 2001.
- A fully functional chess playing engine written 100% in ASM; uses a negamax algorithm to find the best move, along with several heuristics to improve performance. Winter 2000.

HONORS AND AWARDS

Spring 2003	Stavros Busenberg Prize for Applied Mathematics
Spring 2002-Spring 2000	Dean's List at Harvey Mudd College
Fall 2000, Fall 1999	Top 500 in the nation in the William Lowell Putnam math examination

ACTIVITIES

Harvey Mudd College Robotics Design Team, Harvey Mudd College soccer club, violin, harmonica, chess.