MATTHEW FRANCIS-LANDAU

GOAL

I believe that in the next twenty years, Artificial Intelligence will be as smart as humans, commonly called Strong AI. I want to be on the forefront of Strong AI research, and I believe that MIT will continue to stay a leader in Artificial Intelligence research. I believe that Strong AI will be further developed with breakthroughs between mathematics and computer science, two of my strong interests and strengths.

EXPERIENCE

ROBOTICS AND ENGINEERING

* Electrical & Mechanical Engineering and Design Engineering, & Programming in the arena of Robotics Competitions for FLL, VEX, FRC, ROV etc., since 2004.

* In addition to these mentored opportunities and competitions, associated course work or training includes: Robotics I, II, Engineering Design & Development I, II, III, CADing with Inventor (Proficient), ID Tech (3 years) Programming C++ and Robotics Design & Engineering.

* Leadership positions: Team Captain, FLL - 2007; Programming Leader 2009 to present (projected for FRC 2012); Team Captain - Vex 2009, 2010, 2011; Lead Programmer for ROV Robot, 2010; and Project Manager (lead) for Engineering Design & Development with flying and land autonomous vehicle with the function of repairing land-ridden robot (2011).

* Stanford University: 1 lower and 2 upper-division university classes in programming and Artificial Intelligence.

* Proficient with CNC Mill and Router, CAMing, and CADing, Designing Circuit Boards, Soldering, Programming in different languages (see below).

* Employment (Subsequent to Internship) Programming remote and autonomous equipment and currently adjunctive to Project Porpoise helping to develop equipment/package, curriculum training programming and co-authored grant proposal to ONR.

GOVERNMENTAL PROGRAMS

* **ONR (Office of Naval Research)**: participated in meeting with ONR representatives followed by co-writing a grant submitted and accepted by ONR. Consultant for the development of a government sponsored robotics program for underprivileged middle and high school teens.

* **Association for Unmanned Vehicle Systems International** (AUVSI in Washington D. C.), 2011. Attended presentations by military agencies, inventors, agencies and vendors. Individually interviewed each vendor and military representative during the week. Functioned as representative of a vendor (employer), who provides camera stabilization equipment for water and land based military crafts.

* **Multi-Agency Craft Conference** (**MACC** in Virginia) co-hosted with the American Society of Naval Engineers (ASNE), 2011.   Attended presentations by military agencies, inventors, civil corporations, and vendors. Functioned as representative of a vendor (employer), who provides camera stabilization equipment for water and land based military crafts.

* **DARPA Grand Challenges**, 2004, 2005, 2007 for autonomous vehicles. I followed these competitions independently (filmed and interviewed teams). Studied with Palos Verdes High School team and their prime mentor and attended pre-qualifiers and DARPA Grand Challenges for each year.

INTERNSHIP & EMPLOYMENT

Internship with Motion Picture Marine, Inc., became employment. Professional functions included:

   * Co-authored grant in which I became employed to develop a control systems and parts for robotic packages to be assembled for high school robotics program sponsored by ONR.

   * Developed method of automatic PID gain adjustment for when stabilizing platform is not mounted on a solid backing (such as the end of a 30 foot Aluminum Jib).

   * Tested and calibrated stabilization systems and equipment performance.

   * Assembling equipment, preparing equipment for shipment, sale, use and field testing within the military research and design devisions, ONR, and motion picture industry.

* Developed method for connecting to device remotely over the internet to be able to access saved logs, as well update remotely over the internet for units that are out in rental houses, or deployed for use by military.

Periodically independently contracted as IT for small businesses managing computer systems as well webmaster to a number of sites.

PROGRAMMING, SOFTWARE, OPEN-SOURCE

* JsApp.US - Design and developed online code editing and testing platform for Node.JS. Currently over a thousand users registered on the platform.

* Programming since 2004. Languages include C, C++, Javascript, Python, LISP.

* Application of programming includes that described above (stabilization unit, device interface, control systems, autonomous robots).

* In addition to the normal website development using HTML, Javascript, and PHP, I have interfaced and developed significantly within the open-source community.

* EyeOS - Developer Caching solution, which provided a 80% plus speed boost in the system. Developed EyeJ, prequel to EyeOS 2.0, used Javascript to power client side user interfaces with server backend components

VOLUNTEER EXPERIENCES

* Food on Foot (2010)

* Middle School Age Mentoring (2008, 2009, 2010, 2011)

* Elementary School Age Mentoring (2008, 2009, 2010 2011)

* Little League Website Master and Statistician Manager for 16 teams for one year.

* Teacher's Assistant (High School Age Students)

* Science Fair at Elementary School

* National Honor's Society

TRAVEL EXPERIENCES

International Travel: New Zealand, Haiti, Cayman Islands, Jamaica, Nova Scotia, Cozumel, Puerto Vallarta, Mazatlan, British Columbia.

USA: Alaska, Hawaii, Washington, Oregon, Wyoming, Utah, Nevada, Arizona, Texas, Ohio, Illinois, Michigan, Wisconsin, Idaho, Florida, Virginia, Washington D.C., New Hampshire, Vermont, Maine, Massachusetts, Rhode Island, New Jersey

Semester at Sea: Week long cruise traveling with Honorable Sandra Day O-Connor and Activist and Civil Rights Leader Julian Bond. Interviewed each person. Educational, Political and Scientific lectures four times each day.

EDUCATION

CALIFORNIA MATHEMATICS & SCIENCE HIGH SCHOOL (PRESENT)

STANFORD UNIVERSITY
(3 COLLEGE COURSES; 2 UPPER DIVISION
INCLUDING A CLASS TAUGHT BY JERRY CAIN, 2010)

CALIFORNIA STATE UNIVERSITY OF DOMINGUEZ HILLS (6 2010, 2011)

EL CAMINO COLLEGE (2009, 2010 2011)

MULTIPLE ON-LINE COLLEGE COURSES VIA STANFORD, MIT, HARVARD, TED, ETC, (2008 TO PRESENT)

HARBOR COLLEGE (ELECTRONICS, 2005)

RECREATION

Velodrome Bicycling at CSUDH, Zip-Lining, Biographies

EDD Robotics Designing for 2012 project (Pseudo Space Robot Rescue Mission)

Hanging-out with like-minded friends!

REFERRALS

David Grober CEO of Motion Picture Marine, Inc. (Oscar and Emmy Awarded System)
Internship Supervisor & Employer

Joseph Carpenter from Northrop Grumman (Professor of Engineering Development and Design)

Don Nguyen from SpaceX (Mentor for Programming FRC Robotics Teams),

James Brennan from Symantec (Architect related to Corporate Security; Programming Supervisor)

Theodore Harder from CAMS (Coach for Robotics and Professor of Physics and Robotic Principles)

Gene Almeida from CAMS (Professor of World History and Economics)

Janet Lewis from CAMS (Mathematics Professor for 3 years)