Examples ofPast Summer Projects

• Designed, simulated, built a wideband active antenna cancellation board.
• Researched micro-motion technologies that can implement two specific applications: (1) a low-power, small mechanical shutter to pulse-width modulate a signal transmitted off a retroreflector and (2) a low-power, small laser directing a mechanical gimbal.
• Modified existing automatic speech-recognition systems to improve performance for tonal languages, specifically Mandarin Chinese.
• Designed and implemented neuron-like learning and classification algorithms useful for identifying specific classes of sparse matrices that commonly appear in technical and scientific endeavors.
• Fabricated transistors that have graphene conduction channels. Chose and incorporated a dielectric for use in a transistor.
• Developed an automated algorithm that identifies and characterizes departure and arrival traffic flows in terminal areas. Flow characteristics include location, geographic extent, and traffic rate. The algorithm is the initial step in master’s thesis research in which traffic flows and weather data will be studied in an effort to identify the type and severity of weather that pilots typically avoid in the terminal area.
• Tracked landscape features for simultaneous mapping and sensor localization.
• Predicted link availability using the Satellite Toolkit analysis software in combination with the emulation environment.
• Debugged and tested electronics for a new high-frame-rate charge-coupled device (CCD).
• Implemented and improved upon the Incident Object Description Exchange Format (IODEF) standard. Involved a significant amount of modular design work, code rewriting, and testing and analysis.
• Investigated orthogonal noise waveforms for multiple-input multiple-output (MIMO) radar processing applications.

To be considered for our Summer Program, please apply to MIT Lincoln Laboratory’s website at www.ll.mit.edu (click on Summer Programs). Please include your cover letter and resume.

To learn more about us, please visit www.ll.mit.edu.

Human Resources
Lincoln Laboratory
Massachusetts Institute of Technology
Lexington, Massachusetts
(781) 981-5500

MIT Lincoln Laboratory’s fundamental mission is to apply science and advanced technology to critical problems of national security. To assure excellence in the fulfillment of this mission, the Laboratory is committed to fostering an environment that embraces and leverages diversity of thought, culture, and experience. MIT Lincoln Laboratory is an Equal Opportunity Employer, M/F/D/V.

U.S. Citizenship is required.
Summer Research Program

Since 1975, MIT Lincoln Laboratory has offered undergraduate and graduate students the unique opportunity to gain hands-on experience in a leading-edge research environment. Program participants will contribute to projects and gain experience that complements their courses of study. Opportunities exist in fields such as communications systems, sensor and radar data analysis, digital signal processing, laser and electro-optical systems, solid-state electronics, software engineering, and scientific programming.

Projects may be available for students with backgrounds in the following areas: Electrical Engineering, Computer Science, Physics, Mathematics, Mechanical Engineering, Aeronautics/Astronautics, Materials Science, Molecular Biology, and Biochemistry.

If you are pursuing a degree in any of these academic areas or comparable scientific or technical disciplines and have an interest in an “MIT Lincoln Laboratory Experience,” please submit your resume to our website at www.ll.mit.edu (click on Summer Programs).

MIT Lincoln Laboratory is located in historic Lexington, Massachusetts, and is only 14 miles northwest of Boston. As part of the MIT community, summer research students have enjoyed sports events, trips to the islands off Cape Cod, sailing, and hiking. In addition, MIT and Lincoln Laboratory are not far from most major routes to New England’s shores and mountains.

ABOUT OUR PROGRAM

To be eligible for our Summer Research Program, students must have completed their junior year of college or be enrolled in a master’s or doctoral program. In addition, students must have maintained an excellent academic record and be a U.S. citizen.

Students will be supervised by Laboratory Technical Staff on a day-to-day basis.

The program runs from early June through mid-August and provides:

- Competitive weekly pay
- Round-trip travel expenses to the Boston area
- Subsidized housing on the MIT campus (meal plans are not available)
- Daily free transportation from the MIT campus to Lincoln Laboratory
- Access to MIT and Lincoln Laboratory’s world-class libraries
- Access to professional and technical training
- Access to MIT Medical/Lexington. Other employees and affiliates of Lincoln Laboratory may use MIT Medical on a fee-for-service basis. Those with outside coverage should present their insurance at the time of visit. Fees not paid by their insurer will be the responsibility of the individual.
- Access to the Fitness Center. For a nominal fee, program participants can join an onsite fitness center run by the MIT Athletic Department.

Students will have opportunities to:
- Attend technical briefings
- Interface with national experts in numerous fields of research
- Work with state-of-the-art equipment on real-world technical applications
- Present the results of their research conclusions at the end of the summer

FIELDS OF RESEARCH

- Advanced Air Defense Systems
- Air Traffic Control Systems
- Biology and Biochemistry
- Cognitive Science
- Computer Security
- Digital Systems Design
- Electro-Optical Technology
- Multiprocessor Computer Systems
- Optical Space Communications
- Radar Signature Analysis
- Radar Systems Development
- RF/Microwave/Antennas
- Satellite Communications Systems
- Satellite Location and Tracking
- Signal Processing Detection
- Software Development/Scientific Programming
- Solid-State Devices