

Eiki Martinson

<http://eikimartinson.com>

I am a mechanical and electrical engineer with experience in hardware design and software development; a history of successful interdisciplinary projects; strong written, visual, and verbal communication skills; and a passion for getting the details just right.

Skills

Industrial design, especially of injection-molded and sheet metal parts, embedded systems development, PCB layout, EMC and product-safety compliance, telecommunications and networking, sensors and data acquisition, robotics, 3D printing, machining and fabrication, web development, LAMP server administration, graphic design. Native English speaker, fluent in Estonian.

ENGINEERING APPLICATIONS

SolidWorks, Onshape, EAGLE, MATLAB and GNU Octave

EMBEDDED PLATFORMS

Atmel AVR, ARM, Microchip PIC, Freescale 68K derivatives

SOFTWARE AND WEB DEVELOPMENT

Python, JavaScript and jQuery, HTML, CSS and SASS, C, Linux and other Unix, SQL, git, svn, SCons

DESIGN TOOLS

Adobe Illustrator, Photoshop, and InDesign; L^AT_EX;

Experience

CBM OF AMERICA, INC.

2008–2021

Research & Development Engineer

Developed and supported products for telecommunications companies such as Verizon, AT&T and BellSouth, including terminal servers, protocol converters, telemetry devices, galvanic isolators. Designed custom I.T. products for hospitals (R&D team shared with Telecom Resources of America, Inc.).

- Designed enclosures, accessories, structural parts in sheet metal
- Designed plastic enclosures for injection molding
- Designed circuits featuring microcontrollers, IP and serial communications, power electronics
- Laid out printed circuit boards
- Created manufacturing drawings, product silkscreens and labels, user documentation, presentation artwork
- Traveled to customer data centers, central offices, and hospitals for support and troubleshooting
- Wrote firmware for embedded systems in C, assembly
- Responsible for EMC, NEBS, UL testing and certification
- Developed customer web portals, web-based administration interfaces for devices, other web applications

HACKLAB NORTH BOYNTON

2015–2020

Instructor and Advisory Board Member

Provided technical services to this community makerspace.

- Created and teach courses in CAD and 3D printing
- Consulted on a variety of projects involving design, desktop fabrication, and electronics

FLORIDA ATLANTIC UNIVERSITY, DEPARTMENT OF ELECTRICAL ENGINEERING

2005–2007

Research Assistant, Principal Investigator: Dr. Daniel Raviv

Developed a new method of efficient water desalination using low-pressure distillation.

- Constructed a fully-instrumented three-story-tall experimental apparatus
- Implemented a data acquisition and control system using LabVIEW, PC-based DAQ hardware, sensors to measure pressure, temperature, flow
- Designed experiments to verify performance, investigate problems such as non-condensable gas accumulation

CARBIDE COMPUTER CONSULTANTS

2005–PRESENT

Technology Consultant

Co-founder of I.T. consulting firm for small business clients.

- Install and maintain Ethernet and wireless networks, video surveillance systems
- Develop custom software and web applications
- Administer Unix web, database, and mail servers

FLORIDA ATLANTIC UNIVERSITY, CENTER FOR APPLIED STOCHASTIC RESEARCH

2001–2002

Research Assistant, Principal Investigator: Dr. Tsung-Chow Su

Contributed to fluid dynamics research in the topics of boundary-layer separation and junction flows using the University's water channel facility.

- Built instrumentation, test models, positioning fixtures in metal and plastic
- Operated still and video cameras to document results
- Designed a 300 volt pulse train generator to drive hydrogen bubble flow visualization apparatus

Education

FLORIDA ATLANTIC UNIVERSITY

FALL 2010

M.S. in Electrical Engineering with Thesis

- National Inventor's Hall of Fame Collegiate Inventor's Competition finalist, 2006 (desalination method)

FLORIDA ATLANTIC UNIVERSITY

SPRING 2004

B.S. in Electrical Engineering, B.S. in Mechanical Engineering; Magna Cum Laude

- Outstanding Senior Design Project award (pipe-inspection robot)
- Department of Mechanical Engineering's Outstanding Achievement award
- Acted as guest lecturer in Statics and Strength of Materials courses
- Organized (with student chapters of IEEE and ASME) a seminar series in practical engineering skills to help prepare students for senior design projects; delivered two of these seminars
- Tau Beta Pi engineering honor society

Selected Publications

E. Martinson, "Barometric distillation and the problem of non-condensable gases," master's thesis, Dept. Computer & Electrical Engineering and Computer Science, Florida Atlantic University, Boca Raton, Florida, USA, 2010.

B. Moore, E. Martinson, D. Raviv, "Waste to water: a low energy water distillation method," *Desalination*, vol. 220, pp. 502–505, 2008.

E. Martinson, M. Miller, S. Wasi, "Improvements in the design of pipe inspection robots," *2003 Florida Conference on Recent Advances in Robotics*, Fort Lauderdale, Florida.