Georgia Institute of Technology
B.S. CmpE '10

GeorgeMelcer

PRODUCT-FOCUSED DESIGN ENGINEER

GMELCER@GMAIL.COM
732.763.6780
WWW.GETTHEGIZMO.COM

CAREER

BOXUNFOLDED: FREELANCE DESIGN ENGINEER/ARCHITECT

6SensorLabs <-||-> Completed full Gluten Sensor Internet-of-Things MVP

1. Completed full hardware and firmware MVP of a sensor to assist in detection of gluten in foods.
2. Built iOS app to communicate with hardware via BLE to POST gluten results to web server. Built the mobile/web server in Node.js.

Go-Ghost <-||-> Implemented filtering and blending image processing algorithms to process an animation workflow in a massively-parrelle (1000's of threads) way using OpenCL. 100x+ performance improvements. Architected and coded!

MM Sports Group <-||-> Created software for volume ticket-broker on StubHub to monitor their ticket prices and auto-adjust to always be competitively priced.

Locketo <-||->Physical design concepts for a consumer electronic device.

TagThis <-||-> Socket-based backend server for mobile app (completed in Node.js)

RGB SPECTRUM: HARDWARE DESIGN ENGINEER

(1) Developed a framework to test claims of HDMI IC manufactures on the validity of their meausrement units within reciever chips.
(2) Developed a test aparatous for measuring airflow through a 5RU chasis for the purposes of cooling.

INTEL: COMPONENT DESIGN ENGINEER

Triaged and debugged graphics related issues from Silicon through Driver. Was responsible for customer communication. Responsible for several large MacBook related updates.

LIQUID ROBOTICS: HARDWARE DESIGN ENGINEER

Designed an embedded system to accurately locate a moving object through the use of many noisy data sources (accelerometer, inertia, and compass). Completed all component selection, circuit design, layout, and build-up.

APPLE: PLATFORM ARCHITECTURE ENGINEER

Created hardware and firmware to interface with sensors for validating use in Apple products as novel Human Interface Devices (HID). Completed Hardware, Debug, Firmware, and Data Visualization.

IBM: ALGORITHM DESIGN ENGINEER

Developed algorithms to efficently disperse user-accounts across computing resources in a datacenter. Algoirthms anazlyzed resource-utilization trends.

HP: FIRMWARE DESIGN ENGINEER

Printers had SD Card reader to allow you to print without a computer. My feature allowed a user-created drawing to be overlayed with an image and printed. The algorithm removed artifacts from shaky hands and smoothly scaled a bitmap from low-to-high resolution. Marketable feature in HP printers.

LANGUAGES

JavaScript, python, C

TECHNOLOGIES

Python Libraries/Frameworks:
selenium; json; xlrd; xlwt; urllib2; json; py2exe; pyserial;Tornado; opencv; threading; PIL;
C Libraries/Frameworks/Compilers:
OpenCV, OpenCL, OpenGL, POSIX, YAGARTO, GNU ARM toolchain, Keil, IAR, gcc, gdb
Web Technologies:
Node.js, Bootstrap, REST, JSON, AJAX, Socket.io, passport.js, express.js, PostgreSQL, mySQL, MongoDB
Hardware Skills:
Component Selection; Circuit Design (Altium, Eagle, Cadence); PCB Layout; Bring-up; Debug;
Peripherals/ICs/Chipsets:
FLASH, Accelermeters, megnetometers, angular-rate sensor, pressure transducer, LED drivers, H-bridge, DC/DC converters, LDO regulator, ambient light sensor, GPIO expander, WiFi, Bluetooth 4.0, Charging, thermosistor, HDMI Rx, HDMI Tx

IMPLEMENTATIONS

Image Processing:
curve smoothing; edge finder; object recognition; object tracking; image blending; image filtering
Embedded Drivers:
accelerometers; pressure transducers; WiFi; Rotary Encoders; HDMI Rx/Tx; magnetometer; angular-rate
HAL:
RS232; I2C; SPI; Timers/RTC;
HID:
command line; menu interface; knobs; momentary push-buttons; position/movement data; temperature