Chris M. Hodapp

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Experience

- *Independent Consultant* *2015 – present*
  - Present: Developing image processing and computer vision solutions on Stack Construction's platform.
  - Past work: Developed electronics and firmware for Losant's IoT platform (STM32 and Intel Edison), and for motor control on 3D printers at Polar3D.
- **Urbanalta Corp.** **Cincinnati, OH**
  Design Engineer *2013 – 2015*
  - Designed and implemented a low-power embedded system based on Nordic nRF51822; this managed battery power, monitored sensors, and communicated with other components via Bluetooth Low Energy
  - Managed C & Haskell embedded software for this, including custom Haskell libraries to assist with real-time and asynchronous tasks in C code and to adhere to a BLE protocol
  - Worked with Maxim Integrated on an experimental time-of-flight ultrasonic sensor
  - Supported other engineers in data modeling, interface design, data analysis, and visualization
- **Etegent Technologies Ltd. (formerly Sheet Dynamics Ltd.)** **Norwood, OH**
  Research Engineer *2008 – 2014*
  - Wrote reports on research and proposals for SBIRs and other grants
  - Worked with a development team on the design, development, and testing of NLign, Etegent's enterprise system for inspection data management in aircraft NDE – mainly in C & C++ with Qt and Java EE
  - Performed computer vision research - 3D reconstruction, SLAM, calibration, and resectioning
  - Collaborated with Mechatronics Lab at Virginia Tech on prototype for inspecting aircraft serpentine ducts; this produced real-time dense 3D models, registered photographs to it, and presented this data to NLign
  - Performed computer simulations of LADAR systems for a research proposal
  - Prototyped a CUDA-based system for real-time GPU-based filtering of 250 megasamples/second data.
- **Valco Cincinnati** **Cincinnati, OH**
  Electronics Co-op *2007 – 2008*
  - Assembled, designed, and prototyped electronics for Valco's lines of industrial adhesive equipment
  - Developed C and VHDL software for the PLDs and microcontrollers powering their electronics
  - Created documentation and fabrication and assembly drawings for production and inventory.

Education

- **Georgia Institute of Technology** **Atlanta, GA**
  College of Computing, M.S. Computer Science, Specialization in Machine Learning *2015 – present*
- **University of Cincinnati** **Cincinnati, OH**
  College of Engineering, B.S. Electrical Engineering with Mathematics Minor *2005 – 2010*

Core Technical Skills

Languages & Libraries: Haskell, C/C++, R, Scala & Apache Spark, Python (NumPy, SciPy, sklearn, Pandas), JavaScript/Node.js, Java, Clojure, Lisp, MATLAB, SQL, bash, LaTeX
Software & Tools: Linux & UNIX, AutoCAD, EAGLE, KiCad, git, Subversion, Eclipse, Visual Studio
Data Science: Data analysis and visualization with R, NumPy, matplotlib, OpenCV, VTK, and MATLAB
Electronics: PCB design and production, embedded development (ARM Cortex, ESP8266, Edison, STM32, MSP430)

Other

- Founding member of Hive13, a makerspace in Cincinnati
- Co-founder of Haskell Embedded blog, a resource for the use of Haskell in embedded systems
- Portrait and landscape photography, alternative photography processes (e.g. cyanotype)