José Hiram Soltren

1201 West Park Street, Cedar Park, TX 78613-2801
✉ jsoltren@alum.mit.edu ✆ +1 (347) 503-9558 ☞ https://www.linkedin.com/in/jsoltren

Synopsis

System Software Engineer. MIT alum. Broad systems and user software experience. Deep experience in device drivers, C/C++, Linux, hardware acceleration.

Experience

Deep Learning Research Engineer Centaur Technology, Austin, TX 2019

- Convolutional and deep neural networks research. Investigation into hardware backends for various toolchains including PyTorch and TensorFlow. Performance analytics for popular networks such as ResNet, SSD, YOLO, Inception, FPN, LSTM.
- *Technologies used: C++, C, PyTorch, TensorFlow, ONNX, gstreamer*

Deep Learning Software Engineer Intel Corporation, Austin, TX 2017-2019

- Software development work on Intel's Nervana Neural Network Processor (NNP) in the Artificial Intelligence Product Group (AIPG).
- Hardware acceleration of deep learning model training. Focus on multiple chip workloads and topologies, data, model, and kernel level parallelism, concurrent execution, algorithm design and performance modeling.
- Software and API architectural design and development for current and future neural network training hardware.
- *Technologies used: C++11, C*

Software Engineer Cloudera, Inc., Austin, TX 2016-2017

- Engineering development work on Apache Spark, a distributed computation platform with fault tolerance billed as the successor to MapReduce.
- Worked on fault tolerance and reliability in Spark core code by implementing a blacklisting mechanism for faulty compute resources.
- Designed an addition to Apache Spark that would allow compute resources to report on memory utilization in real time.
- Worked with QA team on an internal fault injection framework for endurance and vulnerability testing on Apache Spark.
- Bug and feature work in Apache Spark. Worked on customer escalations.
- *Technologies used: Spark, Scala, Java, JVM, Python, Jenkins, git*

Senior System Software Engineer NVIDIA Corporation 2011-2016

- Firmware and device driver development for memory management, 2D graphics, 3D graphics, and accelerated video decode for NVIDIA desktop and mobile GPUs on Linux hosts.
- Technical lead for VDPAU, NVIDIA's accelerated hardware video decoder stack on Linux. Ported VDPAU to two new GPU generations.
- Added H.265/HEVC decode support to VDPAU. Wrote and open sourced `https://github.com/NVIDIA/vdpau-hevc-example`, a stream parser for H.265/HEVC video streams.

EXPERIENCE, CONTINUED

- Root caused and fixed a critical, stop ship issue related to video decoding on Maxwell GPUs. Lead a worldwide team of firmware, kernel, hardware, and ASIC engineers to get to the bottom if it.
- Rewrote shaders used in the video decode pipeline from Cg into GLSL, allowing the video shaders to move to a leaner implementation using a new shader compiler.
- Fixed multiple bugs in the NVIDIA Linux driver graphics stack related to performance, system reliability, video quality, and memory economy.
- Served as technical mentor to several engineers over the years. Mentees have gone on to make substantial contributions to OpenGL, Vulkan, X.org, and the Linux kernel.
- *Technologies used: C, C++, OpenGL, Cg, GLSL, assembly (x86, ARM), FPGA hardware emulation, Linux kernel, gdb, Perforce, git*

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA

Master of Engineering Electrical Engineering and Computer Science 2009

Bachelor of Science Electrical Engineering and Computer Science 2007

Operating Systems, Biomedical Informatics, Communication Theory, Scientific Computation, Signal Processing, Power Electronics.

LANGUAGES

Fluent in: English, Spanish, C.

Proficient in: OpenGL, Java, JavaScript, R, C++, Scheme, Perl, Python, PHP, MATLAB, Cg, GLSL, CUDA, PyTorch, TensorFlow.

CITIZENSHIP

United States

1201 West Park Street, Cedar Park, TX 78613-2801
✉ jsoltren@gmail.com ✆ +1 (347) 503-9558
☞ https://www.linkedin.com/in/jsoltren