

JASON FRERICH

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EDUCATION

Texas A&M University
Bachelor of Science (BS)
Electrical Engineering (2001)

TECHNICAL PROFICIENCIES

SOFTWARE ENGINEERING:
Python, Perl, Django, pytest,
unittest, linux, Splunk, HTML,
XML, SQL, Vimscript, zsh/tcsh,
DataTables, Visual Basic

KNOWLEDGE:

Confluence, Jira, RT, Perforce,
CVS, git, JavaScript, jQuery,
Bootstrap, CSS, Electron, npm,
REST, Bitbucket

CIRCUIT DESIGN:

Digital Circuit Design, Clock
Distribution, Static Library,
Cache Memory, STA, EM/IR
Analysis

HARDWARE ENGINEERING:

Cadence, Spice, HSPICE, Simplex,
Hspice, NanoTime

PERSONAL PROJECTS:

GetRealty: Electron, Python, Perl,
SQL, Node.js, HTML, CSS,
Bootstrap, JavaScript, jQuery,
DataTables, Visual Basic

PATENTS

Power estimation in an
integrated circuit design flow
(9,443,045)

Late-select, address-dependent
sense amplifier (8,472,267)

CAD & SOFTWARE DEVELOPER / DIGITAL CIRCUIT DESIGN ENGINEER

Driven and creative hardware/software designer with 17 years of experience in semi-conductor Digital IC design. Broad range of IC design flow knowledge including Digital IC design, software development, and deployment. Ability to recognize areas of improvement for workflow efficiency and automation. Excellent communication skills, proven to attract customers for adoption of software design flows.

APPLE INC, AUSTIN, TX

(Software Engineering)

(2010-2018)

Signoff Methodology Flow

- Developed flow to verify GPU processor designs met signoff specifications. Used by US and international GPU design teams, including iPhone, iPad, and iWatch
- Perl backend development captured collections of signoff metrics and injected data into MySQL
- Frontend dashboard displayed live signoff status. Dashboards for front-end verification, physical design and verification, timing analysis, IR/EM analysis, DFT
- Scalability allowed easy addition of dashboards
- Software included full regression testing and 52 page user manual

Dashboard Implementation

- Responsible for implementing dashboards for internal customers as well as gaining new customers for dashboard development.
- Included understanding team data, creating data model/schema for SQL storage, parsing log files and collecting tool/user metrics
- Implemented dashboards using HTML, XML, DataTables jQuery plugin
- Designed, implemented and maintained 12+ custom dashboards

Splunk Dashboards

- Helped evaluate Splunk Enterprise tool suite
- Converted all custom dashboards to Splunk

INTRINSITY, AUSTIN, TX

(Circuit Design / Software Engineering)

(2001-2010)

Extracted Netlist Simulation Script

- Created script that modified extracted netlist device sizing for resimulation
- Greatly reduced time to completion by eliminating schematic / layout / extraction turnaround before achieving new simulation results

Static Timing Analysis Script

- Converted timing path into PNG timing diagram, using perl, Xfig,
- Vim – Created plugin to generate and load diagram from inside timing file
- Vim – Created syntax highlighting and quick keys to traverse timing file

Power Estimation Software Flow (Patented by Apple)

- Perl script parsed custom netlist and produced spice current measurement statements for power nodes across multiple clock cycles
- Parsed spice output measure statements and provided hierarchical view of power in XLS and HTML formats

Electromigration and IR Drop Analysis (Simplex Solutions Tool Suite)

- Implemented PerlTK GUI to setup inputs, initial conditions, and environment
- Automated gathering of floorplan information to perform high level metal analysis

Standard Cell Design

- Designed all static cells used in 130nm Matrix Math Processor
- Sizing tables produced timing results for varying load and drive strength

Clock Control and Distribution Design

- 2GHz, 90nm low skew, 4 phase clock control and distribution with variable phase delay and duty cycle

Cache Memory Design

- 1.1GHz, 90nm 2MB L0 cache
- 1.2GHz, 90nm 1MB Tag array