
Gregory Phillip Gutshall

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Statement of Purpose

I wish to expand upon my nearly 10 years of experience in semiconductor manufacturing and software automation by designing, implementing, and maintaining the diverse technologies found in this space.

Accreditation

- 2013** **M.Eng in Electrical Computer Engineering**
The Oregon State University, *GPA 3.5, Software & Signal Processing*
- 2006** **B.S. in Electrical Engineering; Minor in Entrepreneurial Mgmt.**
The Pennsylvania State University, *GPA 3.3, Control Systems*

Programming Skill Set

OO: Java, C#, Python, C++
Procedural: C, VB, Matlab
Web: HTML, CSS, JS, AngularJS, HTTP/SOAP/Rest
RDBMS: MS-SQL, Oracle, Postgres, MySQL
Build: Bash, Batch, Ant, Maven, Ivy, Jenkins, SVN, Git
Functional: Scala
PLC: AB-ControlLogix, Siemens-Simatic

Semiconductor Manufacturing

SEMI: SECS/GEM, HSMS
MES: Promis, Eyelit, Workstream, SAP-ME
SPC: Camline-Space

Employment History

2011-present **Systema GmbH - Corvallis, OR**

Software engineering consultant

- Designed and developed automation solutions for US customers.
- Led the product development for the suite of SAP service gateways.
- Participated in all phases of customer development, from sales acquisition through post-deployment technical support.

Analog Devices Inc. (FKA, Linear Technology) - Camas, WA (2014-2017)

- Helped with the initial rollout of the equipment integration solution for the Camas fab.
- Developed solutions for several custom use case scenarios at both the Camas and Hillview fabs.
- Created several extensions to the ADI EI-kernel to aid common use cases.
- Provided technical support for both the Camas and Hillview fabs.
- Aided in the specification phase for several extensions.

Boeing Spectrolab - Sylmar, CA (2012-2016)

- Worked with PV aerospace customer to design and implement an equipment integration solution across the fab.
- Created drivers for custom OEM tools. Worked with customer to create tool characterization maps for several non-standard tool types.
- Integrated tool events to their “home-grown” MES, along with material consumption to SAP and data collection to Camline-Space.
- Created a tool controller and a custom GUI for the customer's PV cell circuit welding stations.

FLIR Systems (FKA, Point Grey Research) – Vancouver, BC (2015)

- Deployed SAP-ME MES and assisted in the modeling.
- Worked with the customer to develop HTTP clients using their existing tool infrastructure.
- Demoed a Web-GUI that uses a web-socket broker to receive live machine event data.

FujiFilm (FKA, Dimatix) – Santa Clara, CA (2017)

- Implemented an equipment integration solution into the customer's backend fab.
- Developed a transitional software Migration Switch that brokers traffic between their legacy MES and a new Eyelit MES.
- Created an Eyelit Gateway that exposes MES functions to their equipment controllers.
- Extended a C# kernel to allow the customer to migrate legacy GUIs to the new message bus architecture.

HP-Ink (FKA, HP) – Corvallis, OR (2011-2017)

- Supported the customer by maintaining and upgrading various equipment integration solutions.
- Contributed to the development of an Incident Reporting System used to track operator notes about any given lot.
- Assisted in the upgrade from a legacy version of Camline-Space.

Infineon Technologies AG – Morgan Hill, CA (2017)

- Developed a custom equipment controller that integrates an external multi-channel temperature controller to an existing Besi-Datacon Bonder.
- Created a new MODBUS gateway to allow for generic interaction to the external PLC.
- Designed a recipe schema that coordinates interactions between the tool and external PLC.

Prolamsa – Byran, TX (2014)

- Assisted in the development of a total SAP equipment integration and MES solution. A simple solution was developed to meet the needs of the customer's in-line process.

Qorvo (FKA, TriQuint Semiconductor) – Richardson, TX (2011)

- Worked with customer to create a SAP-MII program to detect new route data and transfer it from Workstream to SAP for costing purposes.

St. Jude Medical Devices – Sunnyvale, CA (2016)

- Created a data collection system that integrates to several SECs complaint tools, as part of a sales acquisition demo. An equipment integration solution has been quoted and is in negotiation terms now.

Vishay Intertechnology - Itzehoe, Germany (2017)

- Worked as a third party contractor to integrate Promis-MES data to a Mentor Graphics product called “PAT-man” for yield analysis.
- Characterized and documented the current solution, then worked with the customer to design a replacement strategy.

2009-2010 Sanyo Solar of Oregon - Salem, OR

Controls and systems engineer

- Implemented the integration of new semiconductor manufacturing equipment.
- Maintained and improved the various factory wide manufacturing control software programs and preventative maintenance PLCs.
- Built a web reporting interface for operations management.

2007-2009 The Conair Group - Pittsburgh, PA

Electrical and software design engineer

- Designed and managed the electrical development of a new water chiller product line; including creating prints, sizing power components, and coding embedded C/C++.
- Built an automated test stand to quickly test and document each new water chiller, using VB script, Postgres DB, and apache web server.
- Supported legacy air dryer products based on the Intel 8051 processors, including software updates and replacement of discontinued hardware parts.
- Designed and brought to market a new RTD temperature profile probe for use in plastic drying hoppers.
- Helped develop a cross-platform application to communicate to several industrial devices and port data back through a server to web clients.
- On-site development and debugging experience during large customer installations.

2006-2007 Danaher Motion - Radford, VA

Sales engineer

- On-site development and debugging experience during large customer installations.
- Designed and built a Two Axis Step Motor System for future training programs.
- Assisted in the development of Sales Growth for Danaher Motion and partook in the Lean Manufacturing process.

2005

PPL Electric Distribution - Montoursville, PA

Engineering intern

- Performed an in-depth voltage profile analysis of twenty line-circuit models that led to a \$70,000 reinvestment of facilities.
- Helped design a spring loaded retention system to dampen the impact forces on a conductor caused by falling trees.
- Recognized as one of the top 5 Most Productive Interns out of 80 Co-Op Associates.

Publications

[1] Chunikhina, E.; Gutshall, G.; Raich, R.; Thinh Nguyen, "Tuning-free joint sparse recovery via optimization transfer," Acoustics, Speech and Signal Processing (ICASSP), 2012 IEEE International Conference on , pp.1913,1916, 25-30. 2012

[2] Gutshall, G. "Sparse Deconvolution Methods as Applied to REC-ToF Ionization Efficiency Curves", Poster, 2540-12P; PittCon Analy. Chem. Conf., 2013

Graduate Research

Thesis: Sparse Signal Recovery applied to Mass Spectrometry

Research involved practical applications to Signal/Image Processing, Control, Communications, Optimization, Embedded Software, and Machine Learning.

- Applied Machine Learning / Optimization Algorithms to practical problems in the sub-domain of signal recovery.
- Worked at the Mass Spectrometry facility at OSU, to detect, process, and analyze high data throughput systems for the analysis of trace molecular compounds.
- Main focus of research is in analytical signal processing techniques to reduce noise and recover true spectral information.