

# Lars Schumann

20 Poplar Way  
Rochester, NY 14618

(734) 383-0003  
larsi.org@gmail.com

## Highlights

---

- 16 years of professional experience in all phases of the software development life-cycle
- Design and implement software projects using Waterfall, Agile (Scrum), and mixed approaches
- Experience in consulting and R & D in both industry and academia
- Strengths in cloud computing, scientific data visualization, graphics programming, human-computer interfaces, and sensor integration
- Enjoys collaborating with team members as well as working independently on projects; excellent communication skills

## Skills

---

General Skills:	project management, written and oral communication, consulting, leadership, software / system design, and algorithms / data structures
Languages:	English (fluent), German (native)
Programming Languages:	Python, JavaScript, Java, C/C++, PHP, Perl
Programming Tools:	code versioning systems (centralized and distributed), automated testing, documentation generator, continuous integration server
Programming Environments:	Windows, Linux, virtual machines (VM), embedded system
Concurrent:	cloud: Amazon Web Services (EC2, S3, CloudWatch, Route 53) clusters: job queue / MPI
World Wide Web:	extensively familiar: Apache and Nginx (install, setup, and maintenance), HTML/CSS, Bootstrap, PHP/JavaScript, dynamic data with databases/XHR familiar: Node.js, Express.js, AngularJS, tomcat, turbine, velocity
Database:	extensively familiar: PostgreSQL, MySQL, and SQLite familiar: Redis and MongoDB
Database Frontends:	phpMyAdmin, pgadmin3, pgmodeler, sqliteman, redis-commander, mongo express
3D Toolkits:	OpenGL, JOGL, GLSL, Performer/CAVELib
3D modeling and cleanup:	3D Studio MAX, Mimics (CT scans), 3-matic, Magics, SketchUp
Georeferenced Data:	Google Earth / SketchUp, Google Maps API
e-commerce:	zen cart, phpbb

## Experience

---

Datto, Inc.  
Senior Software Engineer

Rochester, NY  
November 2015 – present

- 

BUILDlab, LLC  
Senior Software Engineer

Dryden, NY  
April 2013 – September 2015

- Creation of Apidae, a cloud-based computational engine that conducts high-performance simulation of energy models of buildings. Apidae allows users to run thousands of simulations

concurrently, offers special statistical and parametric search algorithms, and visualizes the results with interactive charts.

- Core team member responsible for all project aspects including: designing the system; creating install scripts for the cloud instances and maintaining the development virtual machines (VM); creating database schemas and queries for metadata and high-level results; processing of simulation results and visualizing them; and managing sensor / weather data.

Cornell University – Program of Computer Graphics  
Research Support Specialist III

Ithaca, NY  
September 2008 – April 2013

- Co-lead designer/programmer of the Sustain framework for the Sustainable Energy Project (100k lines of code)
- Supported Cornell faculty with their research and advised graduate and undergraduate students
- Integrated cluster and cloud computing to create a flexible computational environment
- Created wired and wireless sensor networks to log data (like temperature, relative humidity, pressure, and ambient light), stored data in databases, and made data accessible on web servers
- Prototyped advanced human-computer interfaces, including 3D projection systems and 3D gesture recognition using depth-sensors (Kinect); built a multi-touch table interface; and reverse engineered a digital drafting table.

University of Michigan – UM3D Lab  
Research Computer Specialist (formerly Programmer Analyst II)

Ann Arbor, MI  
March 1999 – September 2008

- Lab manager of the University of Michigan 3D Lab (previously Acting Team Leader of the Imaging Technology Group)
- Collaborated with faculty and students interested in scientific visualization and virtual reality
- Visualized data sets using the latest software methods and display technology
- Supported CAVE, AccessGrid, GeoWall, GeoWall2
- Created static and animated graphics and produced movies and videos for use on the Web and in interactive presentations
- Contributed to projects including “Virtual Football Trainer”, the National Science Foundation (NSF)-funded “Network for Earthquake Engineering Simulation” project, the Centers for Disease Control (CDC)-funded “Virtual Disaster Simulator”, and the “Medical Readiness Trainer (MRT)”
- Purchased lab equipment, monitored all lab expenses and income, assisted Lab Director with budget

## Education

University "Otto von Guericke" Magdeburg  
"Diplom-Informatiker" (comparable to M.S. in Computer Science)

Magdeburg, Germany  
October 1991 – April 1997

- Major: Computer Science, Minor: Business Economics
- Aggregate Mark 1.1 (approximately 3.9)
- Master Thesis: "A parametric model for the rendering of lines"
- Emphasis in Simulation and Computer Graphics, courses included:  
Computer Graphics, Geometric Modeling, Image Processing, Computer Vision, Simulation, Continuous Simulation, Petri Nets, Programming Techniques, Logical Programming, Assembly Programming, Efficient Algorithms, Software Engineering, Expert Systems, Data Banks, Operating Systems, Parallel Programming, Theoretical CS, Computer Systems, Mathematics, Electronics

List of publications and references available upon request.