

MICHAEL D. GALLOY

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PROFILE

Fifteen years professional experience in software development and consulting in the areas of scientific programming, visualization, and algorithm development.

EXPERIENCE

Independent projects

2006–present

- Develop and maintain open source project IDLdoc 3.x available at github.com/mgalloy/idldoc. Libraries such as the *lib/graphics* directory of IDL's distribution as well as David Fanning's popular Coyote library using IDLdoc formatted comments.
- Created several other open source IDL projects, such as a library of routines at github.com/mgalloy/mglib; a unit testing framework, mgunit, available at github.com/mgalloy/mgunit; and an IDL command line replacement, rIDL, available at github.com/mgalloy/ridl.
- Write articles posted at michaelgalloy.com.
- Self-published *Modern IDL: A Guide to IDL Programming*.
- Review books for Packt Publishing on Python topics such as matplotlib and parallel computing. Also have reviewed a book from Springer on computing fundamentals.

NCAR - High Altitude Observatory

2015–present

Software Engineer/Programmer II

- Responsible for maintaining data pipelines for the Coronal Multi-Channel Polarimeter (CoMP) and Coronal Solar Magnetism Observatory K-coronagraph (K-COR) instruments.

Tech-X Corporation Boulder, CO

2009–2015

Research Mathematician

- Responsible for obtaining funding and executing research in areas supporting scientific computation from government grants and commercial consulting contracts.
- Product manager for GPULib (a GPU accelerated IDL library for scientific computations) and FastDL (parallel computing libraries for IDL).
- Principal Investigator for Phase I/II NASA SBIR Grants, "A Rapid Model Fitting Tool Suite".
- Principal Investigator for IR&D in using GPUs for tomography.
- Principal Investigator for Phase II NASA SBIR Grant, "Remote Data Exploration with IDL".

Tech-X Corporation Boulder, CO

2006–2009

Software Developer II

- Responsible for writing IDL and Python computational and visualization software in support of physicists.
- Principal Investigator for Phase I NASA SBIR Grant, "Remote Data Exploration with IDL". Contributed code to IDL-OPeNDAP bindings.
- Contributed to FastDL and GPULib projects. These projects provide IDL bindings for high performance computing libraries.
- Maintained VorpableView, an IDL GUI for visualizing VORPAL particle physics datasets.
- Developed TxView, a Python GUI for visualizing several different particle physics dataset formats.

Research Systems, Inc. Boulder, CO

2001–2006

Senior Instructor/Consultant

- Responsible for all aspects of teaching IDL courses including creating and maintaining courseware.
- Taught IDL courses of all levels to over 750 students nationally and internationally. Instructor evaluations achieved a mean of 4.5 out of 5. Successfully developed content for custom courses based upon student request. Conducted shoulder-to-shoulder instruction and consulting.
- Advised and consulted on projects involving ENVI user functions and 3D visualizations.
- Through conducting internal classes and answering informal questions became a resource for tech support, sales engineers, instructors, and consultants at RSI.
- Contributed on a regular basis to the IDL user community with code and whitepapers on the RSI code library.
- Successfully helped ENVI development team by coding and bug finding/fixing.

Qwest/US WEST Boulder, CO

1999–2000

Member, Technical Services

- Member of a group of mathematicians solving optimization problems involving acquisition and deployment of resources
- Designed, coded, and maintained SNET ring planning software in a team environment. Employed extreme programming in all phases of the project. Responsible for maintaining the performance metrics for the team. Using Java, implemented linear programming and graph theory algorithms.
- Created a variety of mathematical models to study DSL qualification.

TRW, Aurora, CO

1999

- Researched algorithms involving genetic algorithms.
- Qualified for security clearance

Black Hills State University Spearfish, SD

1998–1999

Assistant Professor

- Tenure track position in the Mathematics Department
- Taught Calculus sequence and College Algebra courses. Obtained “Excellent” student evaluations in each course.

EDUCATION

University of Kentucky

1993–1998

Ph.D., Mathematics

- Major area: complex analysis

Rose-Hulman Institute of Technology

1989–1993

B.S., Mathematics

- Sousley Award for Outstanding Senior in Mathematics
- Minors in Computer Science and Literature

SOFTWARE TECHNOLOGIES

- Languages: IDL (including use of the ENVI library), C, CUDA, Python, Java, Fortran
- Web: working knowledge of HTML, CSS, Javascript, Pylons (now Pyramid)
- Software development: Subversion, Git, CMake/CTest/CPack, issue tracking software

REFERENCES

Available on request.