

Gregory B. Hill

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Summary

Software engineer currently developing bioinformatics web applications for the U. Colorado Natural History Museum. Qualifications starting with most recent include Java Certification from SUN (2004), GIS Certificate, U. Denver (2003), M.S. Computer Science, U. Colorado (1994). Technologies include [languages] Java, C++, Python, Perl; [GIS] Gazetteers, WFS/WMS/WCS, PostGIS, JTS, deegree, ArcGIS, ArcIMS; [Web] AJAX, Struts Framework, Java Server Faces, JSP, Customized Tag Libraries; [Exchange Formats] XML, XSL, JAXB, KML; [i18n] UTF-8, UCS-2, multibyte encodings.

Recent Accomplishments

- Software architect and developer for ‘**GRIPPER**’ (Geographic Referencing for Investigating Phylogenetics and Pathogenicity). With GRIPPER, a researcher can answer questions like “At what temperature and humidity ranges did taxon ‘a’ mutate into taxon ‘b’? Were there farms with pigs or ducks within 10km of the mutation site? How would the answer change if considering only wetlands within China? GRIPPER is a web application built using a customized gazetteer containing at present close to 500 million worldwide features that include occurrence data, a catalogue of tiled raster layers, and geographic features. Users import occurrence and phylogenetic data for analysis; results include GoogleEarth visualization. AJAX, Struts, JSF, and deegree form core of the UI.
- Gazetteer expert for ‘**Biogeomancer**’, a multi-institutional collaboration for automated georeferencing of natural history collection records. PostGIS gazetteer built from delimited text files and from shapefiles. Source data includes TIGER, National Atlas, GNS, The Getty Names, Protected Areas, and a worldwide dataset of Administrative boundaries provided by collaborator UC Berkeley. Handled source data from a variety of international encodings through automatic character set detection and conversion.
- Designed and wrote ‘**Island Net**’, an application similar to GRIPPER, but specialized for Caribbean Island biodiversity, and including support for species distribution prediction.

Tools

- **Platforms** (including system administration): Windows, Unix.
- **Communication**: Excellent written and oral presentation skills. Skilled with natural languages (proficient in French, some German).
- **Configuration Management**: ClearCase, CVS (WinCVS), Subversion.
- **Database Administration**: PostGIS.
- **Other**: Please Enquire.

Education

- **GIS Certificate (U. Denver), 2004.**
- **SUN Java Certification (Programmer Level), 2004.**
- **M.S. Computer Science, U. of Colorado, 1992.**
- **B.S Computer Science, U. Michigan (*with distinction*)., 1987.**

In addition, completed the coursework and preliminary exams for a Ph.D. in Computer Science at the University of Colorado.

Employment History

- **U. Colorado Natural History Museum, Prof. Research Assistant, Current**
GRIPPER architect and developer (please see 'Recent Accomplishments, p. 1).
Biogeomancer gazetteer designer and implementer. Island Net architect and developer.
- **Apex Technology, 08/04 – 09/04**
Pentax USA website consumer front-end and administrative website implementation, using Java, JSP, Javascript, and MySQL for programmatic bean-based database access, dependent drop-downs populated from the database, and other features. Successfully completed 4-week assignment customizing automatically generated templates according to Pentax's wireframe specifications.
- **WSERC (Western Slope Environmental Resource Council), 08/03**
Mapped a roadless area of roughly 200 sq. miles on McClure pass near Paonia in Western Colorado with a GPS and digital camera.
- **Ansoft Corporation, 09/00 – 09/02 (Software Engineer)**
Windows 2000 w/ VC++ 6.0, MFC, ClearCase 4.2.
Wrote two standalone COM libraries for importing legacy integrated circuit (IC) projects containing complete multi-layer IC representations, containing both graphical and modeling data. UI programming (tree, list and other controls, menus, mouse tracking, file management). Asynchronous messaging subsystem design and implementation.
IDispatch based scripting using Windows Script Host and Visual Basic.
- **International Language Engineering, 06/98 – 08/00 (Software Engineer)**
Multibyte enabling on HP-UX (in Paris, France). Internationalization programming using Windows NT w/ VC++ 6.0, ICU Libraries, Java 2.0, and Perl.
- **IBM, 05/97 – 01/98 (Software Engineer)**
Configuration management and testing on IBM AIX UNIX System.
- **U. of Colorado, C.S. Dept, 09/93 – 05/95 & 09/95 – 05/97 (Research Assistant)**
Numerical Linear Algebra, Numerical Analysis, Parallel Processing.
- **U.S. Food and Drug Administration, Biometry Division, 06/95 – 08/95 (Intern)**
Numerical optimization for cancer study. Project resulted in article in American Statistical Association's 08/97 conference proceedings (available on request).

Volunteer History

- **Boulder County Parks and Open Space, Volunteer Naturalist, Current**
Took 10 week training for volunteer naturalists with Boulder County. I lead hikes, and am an article writer for the county's naturalist publication 'Images'.

- **U. Colorado Natural History Museum, Volunteer, 10/04 – 1/05**
Implemented a gazetteer lookup feature for MaPSTeDI (Mountain and Plains Spatio-Temporal Database Informatics Initiative, see <http://geomuse.colorado.edu>).
- **USGS, 06/03 – 09/03 (Volunteer)**
Worked with ArcIMS, Java, Javascript, Apache Webserver, and Tomcat to implement a servlet returning correct metadata for extents when downloading a cursor-selected sub-region with the USGS's National Map Server interface.

Completed a student project on fire perimeter attributes, working with the GeoMAC project at the USGS, which serves information on wildfires.

Please contact me for additional prior work experiences or for references.