Jim Tyhurst, Ph.D.
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Application Architect

Professional Summary

Jim is an experienced developer and application architect, who is expanding into statistical analysis, machine learning, and deep learning. His past enterprise experience is proving useful to productize new machine learning applications that have been prototyped by data scientists. Jim uses appropriate tools for a business problem, choosing from machine learning, functional programming, object-oriented programming, relational databases, or NoSQL databases. His understanding of alternative architectures leads to well-structured, maintainable code based on design patterns when appropriate and supported by automated unit tests. Jim has delivered:
- Requirements specifications, including stories, use cases, and UML models.
- Executable Architecture: Framework classes and application infrastructure.
- Application code.
- Instruction and mentoring in development processes.

Technical Expertise

Languages: R, Python, Java, JavaScript, Node.js, SQL.
Platforms: Linux, macOS, Windows, Google Cloud Platform (GCP), Amazon AWS.
DBMS: PostgreSQL, Oracle, SQL Server, DB2, MongoDB.
Methodologies: Scrum, Kanban, Stories, Use Cases, UML, Responsibility-Driven Design, RUP, Structured Analysis.

Professional Experience

Tyhurst Technology Group, LLC   3/00 - Present
Independent Consultant:
- Designed and developed new web applications from inception to maintenance: use cases, stories, JavaScript, Single-Page Applications (SPAs), RESTful microservices, JSPs, Java services, business logic, database design, stored procedures.
- Designed and developed gateways to third party web services, REST and SOAP.
- Evaluated key architectural decisions with respect to industry-accepted best practices to identify risks, benefits, and costs.
- Managed project requirements and test results for Fortune 50 OEM project team and software as a service (SaaS) development team, leading to production deployment.
- Specified development standards and procedures, including design documentation, source control, unit testing, and integration testing.
- Developed a recommendation engine based on comparison of text documents, using document vectors.
- Developed a recommendation engine based on feature matching.
- Designed and prototyped a data pipeline to prepare healthcare documents for deep learning classifiers.
- Worked with local and international psychometric researchers to deliver a scoring application for school assessments based on sampled students' responses to academic questions, student's attitude toward the learning environment, and demographic features.
- Productized an R application as a web service, modifying models as requirements changed, and rebuilding models as the population changed over time.
- Designed and developed an expert system to appraise inventory.
- Developed a natural language parser for domain names.
- Designed decision tree development tools and a reporting tool for medical applications.
- Mentored junior developers.

Industries represented by clients:
>   logistics, transportation, insurance, medical, healthcare, domain auctions, educational testing, document management, e-commerce, data publishing, investment management.

Teaching

Designing Enterprise Java Applications: Best Practices   2009, 2012, 2013, 2014
Co-taught a six-day course in South Korea with Wirfs-Brock Associates, providing an overview of architecture and design principles with special reference to J2EE technologies and best practices.

Developing web service clients in Java   2008
Two-day course taught at Oregon Graduate Institute. The course discusses SOAP-based frameworks, RESTful services, POX over HTTP, and XML-RPC, including multiple techniques for parsing XML messages and several design patterns to improve maintainability and performance of web service clients.

Learning Java   2000 - 2007
Five-day introductory course taught at Oregon Graduate Institute.

University of Phoenix (online courses)   2000 - 2003
- "Fundamentals of Business System Development" (BSA 375) presents essential concepts of the software development lifecycle.
- "Business Systems Development II" (BSA 400) examines methodologies, tools, and standards used for enterprise-level business systems development.

Education

Ph.D. in Linguistics   University of California at Los Angeles
     Dissertation title: "Logical Forms for English Sentences".
     Committee chair: Edward L. Keenan
B.S. in Information and Computer Science   University of California at Irvine
B.A. in Mathematics
     Honors: Graduated Cum Laude in both bachelor's degrees.

Lifelong Learning: Online Courses

- Preparing for Google Cloud Architect Professional Certificate. 2021-11-28. Google 7-Course Specialization. Coursera.
- Machine Learning with TensorFlow on Google Cloud. 2018-12-18. Google 5-Course Specialization. Coursera.
- Building R Packages. 2018-04-28. Johns Hopkins University. Coursera.
- Introduction à la statistique avec R. 2016-11-24. Université Paris-Sud. FUN MOOC.
- Web sémantique et Web de données. 2016-05-26. Inria. FUN MOOC.
- Data Science and R courses. 2014. Johns Hopkins University. Coursera.

More Information

- Detailed work history at: http://www.linkedin.com/in/jimtyhurst/
- GitHub: http://github.com/jimtyhurst/
- Twitter: @jimtyhurst
- Certified ScrumMaster
- Sun Certified Programmer for Java 2 Platform