Ken Horne

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Home Page   Github   LinkedIn

SUMMARY

My focus is machine learning and artificial intelligence. I have extensive experience in general software engineering. I enjoy the challenge of creating machine learning systems to bring order and meaning to data, manifesting new insights. I am also interested in evolutionary computation in several forms, such as genetic algorithms and genetic programming. This has given me experience with massively parallel computation. I regularly handle feature selection which is often the hardest and most critical part of machine learning, then train models on them, as well as modeling system design. I also handle infrastructure improvements and both computational and memory optimization. At 3M I worked on training machine learning models, as well as improving the tools used to train the models. While at IBM I was the go-to architect / developer on the non mainframe side of a Windows/Linux/AIX/ z/OS cross-platform build system. I worked with my team, clearly communicating goals and keeping the dynamic cooperative rather than adversarial.

PROFESSIONAL EXPERIENCE AND ACCOMPLISHMENTS

December 2019 – current Computer science, mathematics, physics research – Self employed, Aurora, CO Simulation and modeling of ranking and recommendation systems. Animations of patterns in prime numbers. Aspects and uses of absolutely normal numbers. Special and General Relativity and possible ties between gravitational time dilation, gravity, and quantum wave functions.

December 2012 – August 2019 Senior Software Engineer NLP R&D – 3M Health Care Information Systems, Silver Springs, MD Machine learning to support NLP medical coding for billing. platform/infrastructure support and optimization. Large database experience.

August 2008 – May 2012 Teaching Assistant / Masters student – Michigan State University Focus on machine learning, artificial intelligence, and evolutionary computation (such as genetic algorithms), some Amazon EC2 experience, and heavy workload / distributed computation experience when doing evolutionary computation runs.

1998- January 2009 Software architect - IBM via contract agencies CDI then CTG, Boulder, CO Lead designer and programmer for internal tooling used by development teams across IBM. Orchestrated integration of AIX based content management system, AIX based defect management system, z/OS based build system, and cross-platform (Windows, z/OS, Linux, and AIX) based client interfaces

SKILLS

Java - proficient with threading, databases, optimization (cpu and memory balancing)
Python – scripting, animation, machine learning, AI
Rust – simulation, borrow checker handling, design architecture
DB2/SQL - experienced with normalized representations in the design realm. Optimized queries to cut execution times by an order of magnitude. Large SQL databases
Machine learning – clustering, feature selection, regression, neural networks, pattern recognition

Artificial intelligence – paper composition, research, collaborative coding and unit test composition
Genetic algorithms / programming – fitness function design, representation analysis and design
Additional skills: Perl, HTML, XML, Javascript, Unix/Linux administration, data mining, AI pair
programming, Math, Linear Algebra, Parallel programming

EDUCATION

Master of Science, Computer Science	3.9	Michigan State University
Bachelor of Arts, Mathematics, minor Computer Science	3.4	University of Virginia