Prashant Kumar

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TECHNICAL SKILLS

C++, Python, Git, Matlab, Unix, SQL, Numpy

EXPERIENCE

Bloomberg LP **New York, NY**
Senior Software Development Engineer 2015 – Present

- Designed workflows for profit/loss calculations to improve trading platform's transparency
- Guided an intern to create components usable in current and planned system architecture
- Created UI for business users to input calculation rules for financial values and output to file
- Coded calculation engine in C++ taking rules and values as input and returning calculated values
- Prototyped persistent data structure for trade history allowing for out-of-order event recording
- Assisted in critical production issues in legacy codebase directly affecting clients' ability to trade
- Proposed deprecation strategy for use of unsupported database APIs in firm-wide code repository
- Instructed coworkers on use of Git and other firm-wide recommended best practices (e.g. packaging)

TFS Capital **West Chester, PA**
Quantitative Analyst and Developer 2013 – 2015

- Coded unit tests to verify behavior of production futures trading code in object-oriented Matlab
- Calibrated convertible bond PDE models with historical multi-dimensional data to price bonds and evaluate risk exposures for hedging in Excel and Matlab as the first bond analyst at the firm
- Improved futures execution for expected savings of over 270 basis points annually on $65MM AUM

Vanguard **Malvern, PA**
Software Engineer 2012 – 2013

- Presented benefits of Groovy to senior staff, leading to incorporation into enterprise Java tech stack
- Performed code reviews for changes to legacy Unix shell scripts supporting data handling jobs
- Resolved Axioma and MarketQA production issues for global equity business of $1T+

University of Pittsburgh **Pittsburgh, PA**
Graduate/Undergraduate Research Assistant 2006 – 2011

- Automated analysis routines in Matlab and Python to process 100+ GB of simulation data
- Replaced non-parallel molecular dynamics engine with LAMMPS to leverage MPI, OpenMP, CUDA
- Tested, verified, and extended C++ Lattice Boltzmann engine to approximate solutions to the Navier-Stokes fluid flow partial differential equation, resulting in publication in J R Soc Interface
- Simulated flow of salt water and gas mixtures through carbon nanotubes using molecular dynamics and calculated electrostatic distributions using density functional theory techniques
- Disproved pharmacokinetic model structures by fitting parameters to mice data using Matlab

EDUCATION AND INTERESTS

University of Pittsburgh
Master of Science in Chemical Engineering 2008 – 2011
Bachelor of Science in Chemical Engineering 2005 – 2008

Stack Overflow contributor; AIME qualifier; Project Euler participant