Andrea Venuta

Software Developer, Quantitative Analyst

Education

MSc Finance & Risk Management — 110L/110
Università degli Studi di Firenze — *2018*

Informatica SS. MM. FF. NN. — 103/110
Università degli Studi di Firenze — *2015*

Diploma di Perito Informatico — 100/100
I.T.I.S. "T. Buzzi" — *2008*

Contacts

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LinkedIn	https://linkedin.com/in/andreavenuta

I live in Prato, Italy and was born on September 2nd, 1989.

Skills

Quantitative Finance

Backtesting of algorithmic trading strategies: Trend-following/mean-reverting on equities, long-short futures volatility trading. Knowledge of econometrics, statistics and quantitative methods of derivatives pricing. Experienced in Bloomberg Terminal API. Experienced in data-science oriented Python (Pandas, NumPy, Jupyter). Experienced in working with large amounts of time series data (Apache Parquet, HDF5, RDBMS). Experienced in low-level algorithm optimization and memory management in C/C++.

Front-end Web Development

Strong knowledge of the Javascript ecosystem. Experienced in interactive data visualization (D3.js/WebGL/Canvas), web application design (Vue.js). Well-versed in ECMAScript6 and proficient in architecting maintainable workflows.

Back-end Web Development / DevOps

Experienced in RESTful web services development with the Java EE/Swing/Hibernate stack, Node.js, Python, .NET Core. Experienced in microservices architecture and Docker Compose-based deployment.

Graphics Programming

Real-time rendering algorithms on the OpenGL pipeline. Computational geometry, algorithms for 3D model procedural generation, representation and animation; shading algorithms.

Machine Learning

Experienced in working with neural networks for AI-based decision making and pattern recognition. Interested in deep learning and modern ML techniques.

Other

Experienced in developing desktop applications in C#/WPF, Java/JavaFX and Electron. Experienced in developing native Android apps. Knowledge of LaTeX.

Professional experience

Azimut Capital Management sgr — *10/2017 - present day*

Interfase s.r.l. — *08/2012 - 02/2018*

GWC World — *08/2011 - 06/2013*

Standouter.com — *08/2011 - 08/2012*

Academic and personal projects

Deep Learning models for High-Frequency Cryptocurrency Forecasting — *2018*

MSc thesis. I applied a long short-term memory based recurrent deep neural network to intraday pricing data for a number of cryptocurrencies listed on the GDAX exchange. Findings showed that a simple model on 5-minute data is unable to forecast returns, but may forecast realized volatility (squared returns) with significant precision.

Procedural Content Generation and Real-time Rendering — *2015*

BSc thesis. I researched and designed a mathematical formalism by merging parametric open L-systems and shape grammars to define urban architectural elements and procedurally generate 3D models of cities. The models were textured with signal function-based, anti-aliased procedural textures and rendered in the context of a deferred, multi-pass shading renderer. The thesis can be read on my personal website.

Neural Network exam project: Gesture Recognition — *2014*

In this project I developed, along with a colleague, a sign language "typewriter" by training an artificial neural network with data sourced from a Leap Motion controller. Every time a threshold on the classification for a sign is passed, the corresponding letter is output.

JS1K competition — *2014, 2015*

I competed twice in the yearly JS1K, a competition based on writing web-based visualizations in at most 1024 bytes of Javascript code. I submitted a minimal tunnel visualization in 2014 and a Perlin noise implementation in 2015.

Goals and interests

Researching the viability of machine learning techniques, such as artificial neural networks and deep learning, in the context of trading strategy planning and automation.

Researching the blockchain technology and its applications both from a financial standpoint and in the context of distributed computing.

Researching upon Virtual Reality rendering algorithms and user experience techniques.

Studying functional programming techniques and languages, such as Haskell and Erlang, to develop fault-tolerant, mathematically testable automated trading systems.

Studying the state of the art in graphics programming, with the objective to develop a high-performance, photorealistic, physically based videogame rendering engine.