



ANDREA VENUTA

Software Developer, Quantitative Analyst

Personal information

Place of birth	Prato, Italy
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Education

MSc Finance & Risk Management Università degli Studi di Firenze	110L/110 2018
Informatica SS. MM. FF. NN. Università degli Studi di Firenze	103/110 2015
Diploma di Perito Informatico I.T.I.S. "T. Buzzi"	100/100 2008

Relevant Skills

Software Development

Core languages: Rust · C++11 · Python · Javascript.
Functional programming · Low-level performance optimization · Concurrency

Quantitative Finance

Algorithmic trading with equities factor models, futures relative volatility trading · Econometrics, statistics and quantitative methods of derivatives pricing · Bloomberg Terminal API · Data-science oriented Python (Pandas, NumPy, Jupyter) · Large time series data (HDF5, RDBMS) · Efficient real-time market data management

Front-end Web Development

Solid Javascript/ECMAScript6 knowledge · Interactive data visualization (D3.js/WebGL/Canvas) · Modern frameworks (Vue.js/Svelte.js) ·

Back-end Web Development / DevOps

RESTful API architecture · Microservices architecture (Docker Compose based deployments) · Developed/deployed services in Rust, Python, Node.js, Java EE

Graphics Programming

Real-time rendering (WebGL/OpenGL) · Computational geometry · Shading algorithms · Procedural content generation

Machine Learning

Neural networks · Deep learning · Computer vision (OpenCV) · Linear/nonlinear programming · Regression analysis

Other

Bash · Linux/Unix · Native Android apps · LaTeX · Win32 reverse engineering

Professional experience

Azimut Capital Management sgr 10/2017 - present day

- Developed a portfolio and order management system for fast automated strategy signal computation, portfolio differencing and order generation. Written in Rust, sourcing prices data from IQFeed / Bloomberg API, deployed in the context of time-sensitive equity strategies (operations on tens of single-stocks for tens of client accounts as close to the end of trading day as possible).
- Developed "Suzaku", a proprietary backtesting platform in the form of a C++ CPython extension, supporting Jupyter widgets via Vue.js/Web Components. Mixed vector/event-driven architecture, allowing limit orders, margin trading, portfolio weight targeting, integrating with the Pandas/NumPy/SciPy stack.
- Implemented an automated signal generation pipeline for the AZ MA Algo Equity Strategies fund: relative vol trading of VIX ETNs replicated via futures, long-short momentum and mean reversion on index futures, with parametric diversification.

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

- Developed a multi-monitor interactive data visualization installation, controlled from a terminal with a local ad-hoc network
- Developed a distributed multi-device Virtual Reality immersive video player, with playback controlled by a narrator with a remote application
- Developed a GIS tool for visually designing domain-specific scenarios, feeding the result to a mathematical model engine and reporting upon its output

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.