Name:	**Yuri Heymann**	Contact details
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Software Engineer / Product Development
Fluent English and French, some German knowledge

Senior financial software engineering background, experienced in C#.NET, JAVA, SQL looking for a new role. Acquainted with software design and processes such as Agile scrum, RAD, desktop/windows application development, client/server and multi-tier architectures, third-party service providers, integration projects, etc. Good problem-solving skills and knowledgeable of statistical methods, pricing and risk frameworks, etc.

FUNCTIONAL SKILLS

Assets Exposure classes:	Equity, fixed-income securities, credits, commodities, currencies.
Pricing & Risk:	market risk, Credit risk, Operational risk, liquidity risk, etc.
Financial reporting:	financial reporting under GAAP

TECHNICAL SKILLS

Software:	C#.NET (4.5, Sync fusion), JAVA (8.0, Hibernate, Mockito), C++, VBA, Python (Pandas, time-series analysis, etc.), TDD, WPF, Typescripts, java scripts, Design patterns, SOLID design, etc.
DB systems:	Oracle, MS-SQL Server, SQL
Math Softs:	GAMS, CPLEX, Matlab, Mathematica, R/Splus

Higher Studies:

Jan-2001 - Dec-2003	Georgia Institute of Technology (Atlanta, USA) Master of Science in Financial Engineering, GPA 3.46/4.0
Oct-1992 - Feb-1997	Swiss Federal Institute of Technology in Lausanne Engineering school, Grade 8.0/10.0

Employment Summary:

Available for work.

July 2018 – Nov 2020   Calypso Technology, London

Senior Software Engineer

- Development work in Java on Calypso's enterprise risk-management system (module for simulated VaR, Monte Carlo VaR, etc).
- Technical work on the Scenario Engine Manager for simulated VaR analytics.
- Shifting of zero yield curve, basis curve, fx derived for cross currency swaps, fx forwards, etc.
- Shifting of CPI curves for inflation derivatives.

- Applying shifts to cap/floor and swaption volatility surfaces
- Applying shocks to fx volatility surface for stress testing.
- Technical work on the hydration process to cache trade related data.
- Technical work on the aggregator.
- Managing curve dependencies when computing VaR and HypPL
- Working on client issues, software enhancements and QA work.
- Release management, branching and merging on a multi-version software life cycle
- Environment: Eclipse, JBoss, Oracle, Gradle, Git, Jenkins, Nexus, JUnit, Mockito, Confluence.

Mar 2016 – Feb 2018   Moody's Investors Service, London

Senior Financial Engineer

- Part of the Model Development Team working primarily on rating models for structured finance.
- Rating models for structured finance and securitization of ABS (auto loans, credit cards, etc.), RMBS, CMBS, CLOs, SMEs, NPLs, Asset-Backed Commercial Papers, Covered Bonds, etc.
- Gaussian Copula by Monte Carlo simulation and closed-form solution for large homogeneous portfolios with factor representation to compute portfolio default and loss distributions.
- Modeling the effect of granularity and concentration risk on portfolio default distribution with binomial expansion method and Herfindahl score.
- Technical work on credit and cash-flow analysis tools of complex structures with various credit enhancements (subordination, overcollateralization, excess spread, reserve funds, etc.).
- Calculation of asset-default correlation based on statistical data using the method of moments and maximum likelihood estimation. Back-testing of default distribution based on a stochastic model including various effects such as mean-reversion, autoregressive term and jump diffusion, using Monte Carlo simulation calibrated on statistical data and surveys.
- Modeling counterparty risk in case of originator, servicer or insurance default, comingling risk.
- Review of models such as credit scorecards, rating models, etc.
- Modeling new transactions and waterfall implementation, model validation process
- QA and development work in VBA, C# and MS SQL Server
- Writing documentation such as User Guides, Business Requirements, Memos, etc.
- Environment: C#.NET, ASP.NET, MS SQL SERVER, Excel VBA, SVN

Sep 2013 – July 2015   Axioma, Geneva

Manager, Product Development

- Development work in C# on Axioma Risk, an enterprise risk management system to report risks for financial entities across multi-asset classes. Various implementations of pricing and calibration routines of the Valuation Framework.
- Calculation of simulated VaR, aggregated risk measures for fixed-income portfolios such as NPV, convexity, duration (Macaulay duration, modified duration and effective duration), spread duration and key-rate durations.
- Pricing of variance swaps (replication method and Heston's based), volatility swaps, capped variance swaps, corridor variance swaps, and forward-start variance swaps. Calculation of the sensitivity measures for variance and volatility swaps.
- Pricing options with the Heston's stochastic volatility model with Fourier inversion method using numerical integration (Adaptive Simpson and Adaptive Filon quadrature) and Fast Fourier Transform. Review of approaches (Heston, Carr & Madan, Lee and Sepp).
- Calibration of Heston's model of stochastic volatility on option's pricing using optimization techniques as genetic algorithm and non-linear programming.
- Some implementation work on inflation indexed derivative such as inflation-linked bonds, zero-coupon inflation swap, year-on-year inflation swaps with convexity adjustment, and inflation cap/floors.
- Correlation swap on equity indexes, equity swaps and overnight index swap.
- Liaising with Research for the integration of fixed-income pricing algorithms into the system (callable bonds, convertibles, bonds with sinking-fund provisions, FRN, etc.)
- Validation work for integration of Axioma Risk to key clients.
- Environment: C#.NET, TFS, MS SQL SERVER, Nunits, Jira.

May 2011 – Sep 2013   Unigestion, Geneva

Developer

- Technical lead for Bloomberg market data feeds. Realtime feed through Bloomberg API. Development of C# module to feed market data from Blomberg WebServices (Datalicense) for the valuation of baskets of equity. Development of a module for the valuation of FX OTC options through Bloomberg BVAL for P&L and delta weighted exposure calculations.
- Various projects in Trading and Operations such as C# Winform application for trade reconciliation, etc.
- SSIS projects to integrate external data providers such as positions, NAVs, subscriptions/redemptions from external Administrators, funds and indices such as from InvestHedge. Importation of datasets from FTP/SFTP servers, encryption/decryption with gpg, Nsoftware, etc.
- Extensive database work with MS-SQL Server (stored procedures, triggers, functions, bcp) for data scrubbing, data flow and to feed reports in Reporting Services.
- Liaising with SQL Server Reporting Services developers to produce client reports, fund performance monitoring and competitor scoring.
- Handling critical incidents on the trading chain and some first-line support during evening shifts, testing of the Disaster Recovery Plan.
- Environment: Windows Server, C#.NET, MS-SQL SERVER, SSIS, Redgate, etc.

March 2005 – Apr 2011   Various contract roles in Switzerland the UK and EMEA.

- Third-line support for front-end application in a private bank in Geneva, made of a ASP.NET and a layer of services communicating with several databases and systems including Darwin for portfolio evaluations, the CMS for client data and a distinguished layer for Order Management System.
- Consultancy at various clients including support of Microsoft Dynamic CRM, Design, Configuration of Microsoft Office SharePoint Servers, collaborative sites portals, etc.
- Functional analysis and building allocation rules for FSA prudential reporting and analysis of trading and banking book. Analysis of exposure types e.g. counterparty and issuer risk, credit risk mitigation, netting rules and segmentations such as by central counterparties, OTCs, etc. and by maturity bands.
- Various projects in C#.NET such as design of FXOptions trade, Winforms, Syncfusion, Nunits, xslt, xpath, etc. Validation of PFEs for SunGard's Adaptiv integration.
- Project for Fund of Funds for tactical asset allocation, visualization and statistical analysis of portfolios of hedge funds, P&L attributions, etc. Portfolio construction analytics in R as marginal and incremental contributions, scenario analysis and portfolio bootstrap.
- Work on pricing analytics for interest-rate derivatives as swaps, swaptions, caps / floors, barriers options, binaries, etc for derivative structuring on a dealing room.
- Consultancy for integration of enterprise risk management software for Danish banks.

June 2004 – Dec 2004   Global Forum for Health Research, Geneva

Statistician Assistant

Assistant for the editing of a thematic issue on the Monitoring Financial Flows in Health Research
- Support for the preparation of materials, charts and reviewing internal methodologies for the 2004 GFHR publication.
- Providing a relational database to track financial flows in health R&D by countries and sectors of performance and sources of funds.
- Wrote an application is C++ to extract, transform and load data from various sources (national accounts, surveys, professional bodies, etc.) into the repository and to automate computation tasks and estimates according to predefined rules / standards (e.g. Frascatti manual of the OECD).

Several research papers statistics, etc.

[2106.00625] The moment-generating function of the log-normal distribution, how zero-entropy principle unveils an asymmetry under the reciprocal of an action (arxiv.org)

[Kelvin and the Age of the Universe: A compendium of traditional astronomy: Amazon.co.uk: Heymann, Yuri: 9781838493660: Books](#)