Kyle D. Kavanagh

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EDUCATION

UNIVERSITY OF MICHIGAN, COLLEGE OF ENGINEERING
B.S.E Computer Science, Cum Laude, Financial Mathematics Minor
May 2014 | Ann Arbor, MI

EXPERIENCE

COINBASE | Match Engine Product and Development | Sr Trading Systems Engineer
April 2018 - April 2019 | Chicago, IL

- Lead distributed systems architect and engineer for Coinbase Markets' low-latency electronic trading platform.
- Designed a full-featured exchange architecture from first-principles. The architecture provides low-latency operation with full fault tolerance and observability to allow for 24x7 operation. The design also included bespoke Order Entry and Market Data protocols and related messaging libraries as interfaces to the exchange. Authored an event-sourced Matching Engine for the new platform.
- Helped open the Chicago office and recruit and hire over twenty people across product, software, x86, networking, and physical infrastructure to build a fully self-sufficient exchange operation.

CME GROUP | Match Engine Development | Lead Software Engineer
July 2014 - April 2018 | Chicago, IL

- Served as the Globex team's representative to the COO's cross-functional Market Microstructure Working Group, responsible for shaping the direction of CME's electronic markets and defining CME's official positions on market structure topics. Regularly provided insight and analysis on subjects relating to participant behavior (e.g. tick-to-trade, messaging behavior, microwave activities), as well as CME market dynamics (e.g. customer concentration, correlation analysis).
- Directly responsible for ensuring consistent performance and capacity of CME's low-latency Globex Electronic Trading Platform. Regularly provided scientific and systematic latency profiling, business message optimization, and order entry/market data parity expertise. Led the design of CME's new iLink 3.0 binary message format and assisted in the architecture of new fault tolerance designs.
- Head of the Telemetry effort as a part of CME's internal startup incubator to open-source/commercialize the performance management and optimization software originally built for the Matching Engine.
- Designed and led the implementation of the architecture for CME's hybrid cloud infrastructure. The design allows for realtime trading data to be reliably piped to AWS for further processing. The architecture is designed to ensure a simple transition to the cloud for applications currently running in a private data center.
- Leader of the Match Engine's summer intern and entry-level hire programs. Responsible for leading recruiting, interviewing, and hiring of summer interns and entry-level software engineers. Regularly worked with HR and division leadership to improve the recruiting and hiring process.

CME GROUP | Match Engine Development | Software Engineering Intern
May 2012 - April 2013, Oct 2013 - May 2014 | Chicago, IL

JP MORGAN CHASE | Treasury & Security Services | Summer Analyst
June 2013 – Aug 2013 | Chicago, IL

PATENTS

Dec 2018	Granted	Resource allocation based on transaction processor classification
Mar 2018	Granted	Data compression of electronic data transaction request messages
Nov 2016, Jan 2018	Granted	Design Patent - Display Screen with Graphical User Interface for Trading System Data
2015-2018	Filed, Pending	Over 15 applications currently pending relating to electronic trading, software and network performance, messaging optimization, and UI/Design.

TECHNOLOGIES

- Low latency Java • R • C++
- Javascript (Backbone.js) • MongoDB
- Corvil • Tibco RV/FTL • Aeron

AWARDS

2014-2017	Excellence Award, CME Group
2010	IBM Thomas J. Watson Scholar
2008	Eagle Scout