

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

CME GROUP | MATCH ENGINE DEVELOPMENT | HEAD OF PERFORMANCE ENGINEERING, SR. SOFTWARE ENGINEER

July 2014 - Present | Chicago, IL

- Directly responsible for ensuring consistent performance of CME's Globex Electronic Trading Platform, including Market Segment Gateways, Matching Engines, and Market Data Components. Lead a team of five performance engineers responsible for the performance of all non-Globex software applications at CME. Working to establish a culture of performance engineering outside of the Globex team and inline performance directly into other teams' SLDCs.
- Serve 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. Regularly provide insight and analysis on subjects relating to participant behavior (e.g. tick-to-trade, messaging behavior, and microwave activities), as well as CME market dynamics (e.g. customer concentration, correlation analysis, and impacts of latency). The working group is tasked with defining CME's official positions on market structure topics and the team's work is regularly presented to CME's Management Team and Board of Directors.
- Assisted teams with performance analysis and improvements during the launches of CME's MDP 3.0 market data and Direct Connect order entry initiatives. 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.
- Designed and lead 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. Architecture is designed to ensure an easy and simple transition to the cloud for applications currently running in a private data center.
- Developed a algorithm to accurately forecast Globex order-entry latencies. Model is used to determine if abnormal latencies were expected/unexpected, as well as to determine the impact of changing service-time performance on overall response-time.

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

Oct 2017	Filed, Pending	Selective Dynamic Tracer Message Logging Based on Realtime Bottleneck Detection
Oct 2017	Filed, Pending	Selective Database Indexing in Performance Measurement Systems
Sept 2017	Filed, Pending	Compressed Message Tracing and Parsing
July 2017	Filed, Pending	Concurrent Write Operations for use with Multi-threaded Inline File Logging
April 2017	Filed, Pending	Mitigation of Latency Disparity in a Data Transaction Processing System
April 2017	Filed, Pending	Data Compression of Electronic Data Transaction Request Messages
March 2017	Filed, Pending	Communications Protocol Based Message Identification System
Nov 2016	Granted	Display Screen with Graphical User Interface for Trading System Data
Oct 2016	Filed, Pending	Resource Allocation Based on Transaction Processor Classification
Sept 2016	Filed, Pending	Message Cancellation Based on Data Transaction Processing System Latency
Oct 2015	Filed, Pending	Systems and Methods for Calculating a Latency of a Transaction Processing System
May 2015	Filed, Pending	Concurrent Lock Free Write Operations for Use with Multi-threaded Inline File Logging

TECHNOLOGIES

Java (Unsafe) • R • C++
Javascript (Backbone.js) • MongoDB
Tibco RV/FTL • Aeron

AWARDS

2014-2017 Excellence Award, CME Group
2013 Dean's List, University of Michigan, College of Engineering
2010 IBM Thomas J. Watson Scholar
2008 Eagle Scout