



# TECHTalk@CSAIL

**JPMORGAN CHASE & CO.**

Fair and explainable AI/  
ML for financial  
services

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## Abstract:

The financial services industry has many needs for fairness and explainability in artificial intelligence and machine learning, which stem from considerations of transparency, ethics, regulatory compliance, and risk management. For example, banks must prove that the way that they approve mortgages comply with fair lending laws and promote community development, while at the same time managing risk appropriately. These needs translate directly onto AI/ML solutions being developed for these business needs. In this talk, I introduce two research challenges that arise from the unique mix of business needs and regulatory constraints. First, we develop new methods for measuring bias in decision processes where labels for protected class membership cannot be observed. Second, we review the many definitions of fairness and existing results on which definitions are mutually incompatible and present our latest results exploring fairness-fairness and fairness-performance trade-offs.



**Speaker: Jiahao Chen**  
**Vice President and AI Research Lead**

## Bio:

Jiahao Chen is a Vice President and Research Lead at JPMorgan AI Research in New York, with research focusing on explainability and fairness in machine learning, as well as semantic knowledge management. He was previously a Senior Manager of Data Science at Capital One focusing on machine learning research for credit analytics and retail operations. When still in academia, Jiahao was a Research Scientist at MIT CSAIL where he co-founded and led the Julia Lab, focusing on applications of the Julia programming language to data science, scientific computing, and machine learning. Jiahao has organized JuliaCon, the Julia conference, for the years 2014-2016, as well as organized workshops at NeurIPS, SIAM CSE, and the American Chemical Society National Meetings. Jiahao holds a PhD in chemical physics, a MS in applied mathematics, and a BS in chemistry, all from UIUC. He was formerly a postdoctoral associate at MIT, a visiting scholar at Ritsumeikan University in Japan, and a member of technical staff at DSO National Laboratories in Singapore. Jiahao has written 35 papers with over 400 citations, as well as over 120 packages for numerical computation, data science and machine learning for the Julia programming language, in addition to numerous contributions to the base language itself. <https://jiahao.github.io>

**Wednesday, November 6, 2019**

**12:00PM - 1:00PM EDT**

Star Seminar Room, 32-D463  
Ray and Maria Stata Center  
Cambridge, MA 02139

**Please RSVP**

<https://www.eventbrite.com/e/csail-alliance-jp-morgan-tech-talk-tickets-79769983167>

**OR Email Callie Mathews to confirm attendance -**  
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