



## Joshua Kroll

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### **Trust and Accountability in Computer Systems**

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**Abstract:** The increase in both ubiquity and importance of software systems in modern society causes a commensurate increase in demands that such systems uphold normative requirements, such as privacy, fairness, or accountability. However, while human decision-makers and bureaucracies are subject to time tested recordkeeping, oversight, and control mechanisms, a governance gap often emerges when critical functions are replaced or augmented with software. This talk explores the nature of this gap through the twin lenses of trust and accountability, as conceptualized in computer security and in legal and political philosophy, respectively. This gap can be narrowed through careful system design. As an example, the talk presents a concrete system for building cryptographically auditable logs for automated decision-making systems that support robust analysis of procedural regularity, a foundational requirement of due process. Finally, the talk lays out a research agenda in the governance of software systems, framing research challenges and open questions around relating complex social, political, or legal norms to implementable engineering requirements.

**Biography:** **Josh Kroll** is Postdoctoral Research Scholar at the School of Information at the University of California at Berkeley, Joshua's research focuses on how technology fits within a human-driven, normative context. He is most interested in the governance of automated decision-making systems, especially those using machine learning. His paper "Accountable Algorithms" in the University of Pennsylvania Law Review received the Future of Privacy Forum's Privacy Papers for Policymakers Award in 2017.