

# Securing Internet Economies -- Syllabus

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## Accountable, verifiable resource accounting (and privacy too):

*Systems by which customers can prove their providers are doing what they said they'd do.*

- [Reliable Client Accounting for Hybrid Content-Distribution Networks.](#)
- [Verifiable Resource Accounting for Cloud Computing Services](#)
- [Verito: A Practical System for Transparency and Accountability in Virtual Economies](#)
- verifiable auctions and mechanism design
- [Efficient Private Bidding and Auctions with an Oblivious Third Party.](#)
- [Accountable virtual machines](#)
- [Private and Verifiable Interdomain Routing Decisions](#)

Theoretic foundations:

- Streaming authenticated data structures with applications in bandwidth accounting
- [Multi-user non-interactive verifiable computation](#) (with applications in verifiable auctions)

## Privacy-preserving economies

*Privacy-preserving advertising: design against click fraud, privacy-preserving accounting*

- [Adnostic: Privacy-preserving Targeted Advertising](#)
- Nurikabe

*Digital cash and applications*

- e-cash: David Chaum, and newer constructions
- bitcoin: <http://www.cs.umd.edu/~elaine/docs/bitcoin.pdf>
- bitcoin: guest lecturer: Matt Green
- [Quantitative Analysis of the Full Bitcoin Transaction Graph](#)
- [Evaluating User Privacy in Bitcoin](#)
- [Making Currency Cheap with iOwe](#)

## Fairness and incentives

*Incentives for service providers to offer security*

- [Hourglass Schemes: How to Prove that Cloud Files Are Encrypted](#)
- [Let the Market Drive Deployment: A Strategy for Transitioning to BGP Security](#)
- [Rationality and Traffic Attraction: Incentives for honestly announcing paths in BGP](#)

*In the cloud: How do you allocate fairly while also providing minimum bandwidth guarantees?*

- [Network Sharing in Multi-tenant Datacenters](#) (To provide some background)
- [FairCloud: Sharing The Network In Cloud Computing](#)
- [Sharing the Data Center Network](#)
- [Towards Predictable Datacenter Networks](#)
- [Secondnet: a data center network virtualization architecture with bandwidth guarantees](#)
- [NetShare: Virtualizing Data Center Networks across Services](#)
- [Multi-resource Fair Queuing for Packet Processing](#)

*Inter-tenant communication in cloud computing: (Little explicitly done on this topic, but it will likely become common)*

- [Network Sharing in Multi-tenant Datacenters](#)
- [CloudPolice: Taking Access Control out of the Network](#)

### **Fraud, scam, spam, underground economy, fraud in advertising:**

*How do the scammers operate? How do they make money? What impact does their malfeasance have on the rest of the Internet?*

- Nigerian scams (ongoing work)
- [PharmaLeaks: Understanding the Business of Online Pharmaceutical Affiliate Programs](#)
- [Got Traffic? An Evaluation of Click Traffic Providers](#)
- [Measuring and Fingerprinting Click-Spam in Ad Networks](#)
- [Clickonomics: Determining the Effect of Anti-Piracy Measures for One-Click Hosting](#)
- [Spamalytics: An Empirical Analysis of Spam Marketing Conversion](#)
- [Taster's Choice: A Comparative Analysis of Spam Feeds](#)
- [Understanding the Network-Level Behavior of Spammer](#)
- Analyzing Unique-Bid Auction Sites for Fun and Profit (NDSS 2013, to appear)