



# Shabnam Shafiee, Ph.D.

PATENT AGENT

Shabnam Shafiee, Ph.D. is a registered patent agent in the firm's Intellectual Property group.



## Practices

[Patent](#)

## Education

University of Maryland, PhD, Electrical Engineering Communication, 2008

University of Maryland, MS, Electrical Engineering Communication, 2005

Sharif University of Technology, BS, Electrical Engineering Control, 1996

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Shabnam's practice is focused on patent preparation and prosecution. Her technical expertise includes telecommunications, digital signal and image processing, detection and estimation, information theory and cryptography, coding, and queuing theory. She has prepared and prosecuted patent applications on various technologies including telecommunications, medical devices, cloud-based services, and haptics.

Shabnam's doctoral research was on the information-theoretic capacity of wireless channels subject to jamming and eavesdropping, under various fading and multi-antenna scenarios.

Prior to joining ArentFox Schiff, Shabnam was a patent agent at an IP boutique in Alexandria, Virginia and at a general practice McLean, Virginia law firm. Prior to her legal career, she was a biomedical engineer at an R&D firm in Millersville, Maryland, where she designed and developed real-time digital signal processing hardware and software for MRI cardiac gating and tested the hardware and software on fantoms and on human subjects within MRI scanners at the Johns Hopkins Hospital in Baltimore, Maryland.

## Patents and Publications

S. Shafiee et al., "Reducing Noise in Magnetic Resonance Imaging Using Conductive Loops," US Patent No. 8,659,297.

S. Shafiee and S. Ulukus. "Mutual Information Games in Multi-User Channels with Correlated Jamming." IEEE Transactions on Information Theory, 55(10):4598-4607, October 2009.

S. Shafiee, N. Liu, and S. Ulukus. "Towards the Secrecy Capacity of the Gaussian MIMO Wire-Tap Channel: The 2-2-1 Channel" IEEE Transactions on Information Theory, 55(9):4033-4039, September 2009.

S. Shafiee, N. Liu, and S. Ulukus. "Secrecy Capacity of the 2-2-1 Gaussian MIMO Wire-Tap Channel." 3rd International Symposium on Communications, Control and Signal Processing, St. Julian's, Malta, March 2008.

S. Shafiee. "Signaling and Resource Allocation for Secure Communication in Gaussian Wireless Channels." Electrical and Computer Engineering Department, University of Maryland College Park, February 2008.

S. Shafiee and S. Ulukus. "Achievable Rates in Gaussian MISO Channels with Secrecy Constraints." IEEE International Symposium on Information Theory, Nice, France, June 2007.

S. Shafiee and S. Ulukus. "Capacity of Multiple Access Channels with Correlated Jamming." IEEE Military Communication Conference, Atlantic City, New Jersey, October 2005.

S. Shafiee and S. Ulukus. "Correlated Jamming in Multiple Access Channels." Conference on Information Sciences and Systems, Baltimore, Maryland, March 2005.

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## **Bar Admissions**

[US Patent and Trademark Office](#)