

# Stanley Bak

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Stanley Bak is an assistant professor in the [Department of Computer Science](#) at [Stony Brook University](#) investigating the verification of **autonomy**, **cyber-physical systems**, and **neural networks**.

## Education

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- **Doctor of Philosophy in Computer Science** **May 2013**  
*University of Illinois at Urbana-Champaign*  
Dissertation Title: "[Verifiable COTS-based Cyber-Physical Systems](#)"  
Advisors: [Marco Caccamo](#) and [Lui Sha](#) *Champaign, IL*

## Positions

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- **Assistant Professor, Department of Computer Science** **September 2020-Present**  
*Stony Brook University* *Stony Brook, NY*  
Investigated formal verification methods for autonomy, cyber-physical systems, and neural networks. Wrote and received competitive grant proposals from government agencies and ran student research group while teaching courses at the graduate and undergraduate levels.

## Relevant Publications

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**Publication Metrics:** According to [Google Scholar](#), Stanley Bak has 2040 citations and an h-index 26 as of January 16, 2022.

- "The Second International Verification of Neural Networks Competition (VNN-COMP 2021): Summary and Results", S. Bak, C. Liu, and T. T. Johnson, 4th Workshop on Formal Methods for ML-Enabled Autonomous Systems (FoMLAS) (VNNCOMP 2021)
- "nenum: Verification of ReLU Neural Networks with Optimized Abstraction Refinement", S. Bak, 13th NASA Formal Methods Symposium (NFM 2021), 36% acceptance rate
- "Verification of Neural Network Compression of ACAS Xu Lookup Tables with Star Set Reachability", D. Lopez, T. Johnson; H.D. Tran, S. Bak, X. Chen, and K. Hobbs, AIAA Scitech Forum (SCITECH 2021)
- "Improved Geometric Path Enumeration for Verifying ReLU Neural Networks", S. Bak, H.D. Tran, K. Hobbs and T. T. Johnson, 32nd International Conference on Computer-Aided Verification (CAV 2020), 27% acceptance rate
- "Verification of Deep Convolutional Neural Networks Using ImageStars", H.D. Tran, S. Bak, W. Xiang and T. T. Johnson, 32nd International Conference on Computer-Aided Verification (CAV 2020), 27% acceptance rate
- "NNV: The Neural Network Verification Tool for Deep Neural Networks and Learning-Enabled Cyber-Physical Systems", H. Tran, X. Yang, D. Lopez, P. Masau, L. Nguyen, W. Xiang, S. Bak and T. Johnson, 32nd International Conference on Computer-Aided Verification (CAV 2020), 27% acceptance rate