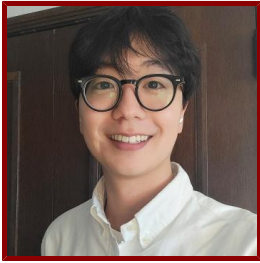


# Stanford

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## Geun Ho Ahn

Postdoctoral Scholar, Electrical Engineering

### Bio

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#### BIO

I am a postdoctoral researcher at Stanford University, specializing in integrated photonics, material sciences, and computational optimization to develop innovative photonic-electronic systems for optical interconnects, metrology, and quantum science.

I earned my Ph.D. in Electrical Engineering from Stanford University, where I worked with Professor Jelena Vuckovic as a SGF fellow and FMA fellow on integrated photonics system through heterogeneous integration and photonic inverse design.

#### HONORS AND AWARDS

- Stanford Graduate Fellowship - STMicroelectronics Fellow, Stanford University (2018)
- Kwanjeong Educational Foundation Overseas Scholarship, Kwanjeong Educational Foundation (2018)
- Timothy B. Campbell Innovation Award in Electrical Engineering and Computer Sciences, University of California, Berkeley (2018)
- Haas Scholars Fellowship, University of California, Berkeley (2017)
- James H. Eaton Memorial Scholarship in Electrical Engineering and Computer Sciences, University of California, Berkeley (2017)

#### PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , EE-PHD (2024)
- Master of Science, Stanford University , EE-MS (2021)
- Bachelor of Science, University of California, Berkeley , Electrical Engineering and Computer Sciences (2018)

#### STANFORD ADVISORS

- Jelena Vuckovic, Postdoctoral Faculty Sponsor

#### LINKS

- Google Scholar: [https://scholar.google.com/citations?user=qljoc\\_0AAAAJ&hl=en](https://scholar.google.com/citations?user=qljoc_0AAAAJ&hl=en)

### Publications

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#### PUBLICATIONS

- **Cavity-Waveguide Coupling Modulation via an Optical Analogue of Superradiance in Microring Arrays** *ACS PHOTONICS*  
Tang, A., Audhkhasi, R., Saxena, A., Tara, V., Ahn, G., Vuckovic, J., Majumdar, A.  
2025
- **Unified laser stabilization and isolation on a silicon chip** *NATURE PHOTONICS*

White, A. D., Ahn, G., Luhtaru, R., Guo, J., Morin, T. J., Saxena, A., Chang, L., Majumdar, A., Van Gasse, K., Bowers, J. E., Vuckovic, J.  
2024

- **Titanium:sapphire-on-insulator integrated lasers and amplifiers.** *Nature*  
Yang, J., Van Gasse, K., Lukin, D. M., Guidry, M. A., Ahn, G. H., White, A. D., Vučković, J.  
2024; 630 (8018): 853-859
- **An Inverse-Designed Nanophotonic Interface for Excitons in Atomically Thin Materials.** *Nano letters*  
Gelly, R. J., White, A. D., Scuri, G., Liao, X., Ahn, G. H., Deng, B., Watanabe, K., Taniguchi, T., Vučković, J., Park, H.  
2023
- **Microwave Spin Control of a Tin-Vacancy Qubit in Diamond** *PHYSICAL REVIEW X*  
Rosenthal, E. I., Anderson, C. P., Kleidermacher, H. C., Stein, A. J., Lee, H., Grzesik, J., Scuri, G., Rugar, A. E., Riedel, D., Aghaeimeibodi, S., Ahn, G., Van Gasse, K., Vuckovic, et al  
2023; 13 (3)
- **Platform-agnostic waveguide integration of high-speed photodetectors with evaporated tellurium thin films** *OPTICA*  
Ahn, G., White, A. D., Kim, H., Higashitarumizu, N., Mayor, F. M., Herrmann, J. F., Jiang, W., Multani, K. K. S., Safavi-Naeini, A. H., Javey, A., Vuckovic, J.  
2023; 10 (3): 349-355
- **Multi-dimensional data transmission using inverse-designed silicon photonics and microcombs.** *Nature communications*  
Yang, K. Y., Shirpurkar, C., White, A. D., Zang, J., Chang, L., Ashtiani, F., Guidry, M. A., Lukin, D. M., Pericherla, S. V., Yang, J., Kwon, H., Lu, J., Ahn, et al  
2022; 13 (1): 7862
- **Integrated passive nonlinear optical isolators** *NATURE PHOTONICS*  
White, A. D., Ahn, G., Gasse, K., Yang, K., Chang, L., Bowers, J. E., Vuckovic, J.  
2022
- **Inverse Design of Optical Vortex Beam Emitters** *ACS PHOTONICS*  
White, A. D., Su, L., Shahar, D. I., Yang, K., Ahn, G., Skarda, J. L., Ramachandran, S., Vuckovic, J.  
2022
- **Photonic Inverse Design of On-Chip Microresonators** *ACS PHOTONICS*  
Ahn, G., Yang, K., Trivedi, R., White, A. D., Su, L., Skarda, J., Vuckovic, J.  
2022; 9 (6): 1875-1881
- **Inverse Spectral Design of Kerr Microcomb Pulses**  
Lucas, E., Yu, S., Ahn, G., Yang, K., Vuckovic, J., Papp, S. B.  
edited by Ilchenko, V. S., Armani, A. M., Sheldakova, J. V., Kudryashov, A. V., Paxton, A. H.  
SPIE-INT SOC OPTICAL ENGINEERING.2021
- **Inverse-designed non-reciprocal pulse router for chip-based LiDAR** *NATURE PHOTONICS*  
Yang, K., Skarda, J., Cotrufo, M., Dutt, A., Ahn, G., Sawaby, M., Verdecruysse, D., Arbabian, A., Fan, S., Alu, A., Vuckovic, J.  
2020
- **Inverse-Designed Photonics for Semiconductor Foundries** *ACS PHOTONICS*  
Piggott, A. Y., Ma, E. Y., Su, L., Ahn, G., Sapra, N. V., Verdecruysse, D., Netherton, A. M., Khope, A. S. P., Bowers, J. E., Vuckovic, J.  
2020; 7 (3): 569-75
- **4H-silicon-carbide-on-insulator for integrated quantum and nonlinear photonics** *NATURE PHOTONICS*  
Lukin, D. M., Dory, C., Guidry, M. A., Yang, K., Mishra, S. D., Trivedi, R., Radulaski, M., Sun, S., Verdecruysse, D., Ahn, G., Vuckovic, J.  
2020; 14: 330-334
- **Toward inverse-designed optical interconnect**  
Skarda, J., Yang, K., Ahn, G., Guidry, M. A., Vuckovic, J., IEEE  
IEEE.2020
- **Inverse design of microresonator dispersion for nonlinear optics**  
Ahn, G., Yang, K., Skarda, J., Vuclovic, J., IEEE

IEEE.2020

- **Synthetic WSe<sub>2</sub> monolayers with high photoluminescence quantum yield.** *Science advances*  
Kim, H., Ahn, G. H., Cho, J., Amani, M., Mastandrea, J. P., Groschner, C. K., Lien, D. H., Zhao, Y., Ager, J. W., Scott, M. C., Chrzan, D. C., Javey, A.  
2019; 5 (1): eaau4728
- **Inverse designed Fano resonance in Silicon microresonators**  
Yang, K., Skarda, J., Cotrufo, M., Ahn, G., Alu, A., Vuckovic, J., IEEE  
IEEE.2019
- **Large-area and bright pulsed electroluminescence in monolayer semiconductors** *NATURE COMMUNICATIONS*  
Lien, D., Amani, M., Desai, S. B., Ahn, G., Han, K., He, J., Ager, J. W., Wu, M. C., Javey, A.  
2018; 9: 1229
- **Polarization-resolved black phosphorus/molybdenum disulfide mid-wave infrared photodiodes with high detectivity at room temperature** *NATURE PHOTONICS*  
Bullock, J., Amani, M., Cho, J., Chen, Y., Ahn, G., Adinolfi, V., Shrestha, V. R., Gao, Y., Crozier, K. B., Chueh, Y., Javey, A.  
2018; 12 (601–607)
- **Strain-engineered growth of two-dimensional materials** *NATURE COMMUNICATIONS*  
Ahn, G., Amani, M., Rasool, H., Lien, D., Mastandrea, J. P., Ager, J. W., Dubey, M., Chrzan, D. C., Minor, A. M., Javey, A.  
2017; 8: 608
- **MoS<sub>2</sub> transistors with 1-nanometer gate lengths** *SCIENCE*  
Desai, S. B., Madhvapathy, S. R., Sachid, A. B., Llinas, J. P., Wang, Q., Ahn, G. H., Pitner, G., Kim, M. J., Bokor, J., Hu, C., Wong, H. P., Javey, A.  
2016; 354 (6308): 99-102