

INTEREST

AI for mental health & wellness: building tools that make care personalized, accessible, and preventative.

EDUCATION

- Massachusetts Institute of Technology Cambridge, MA, USA
Ph.D. in Brain and Cognitive Science Sep. 2024 - Present
- Massachusetts Institute of Technology Cambridge, MA, USA
M.S. in Brain and Cognitive Sciences Feb. 2026
- Seoul National University Seoul, South Korea
M.S. in Interdisciplinary Program for Bioengineering June. 2024
- Seoul National University Seoul, South Korea
B.S. of Materials Science and Engineering Feb. 2021 (Mar. 2016 - Mar. 2018: Military Service)
Combined minor: Brain-Mind-Behavior Understanding the interplay between the brain and its influence on mind and behavior.

RESEARCH EXPERIENCE

- PhD Student (PI: John Gabrieli) Cambridge, MA, USA
Gabrieli Lab, Brain and Cognitive Sciences, Massachusetts Institute of Technology Oct. 2024 - Present
 - Predictive Precision Medicine Model for Depression Treatment Personalization: Designing a machine learning model combining fMRI data and psychosocial variables to predict personalized, evidence-based treatment plans for depression, leveraging historical outcomes to optimize mental health care
- Visiting Student (PI: Ann M Graybiel) Cambridge, MA, USA
Graybiel Lab, Brain and Cognitive Sciences, Massachusetts Institute of Technology Dec. 2022 - Aug. 2024
 - Researched astrocyte functions in relation to dopamine using in-vivo two-color fiber photometry and calcium imaging techniques in both the dorsolateral and dorsomedial striatum regions, focusing on their role in engagement: Developed a computational pipeline for analyzing task-related behaviors using unsupervised clustering, engagement using HMM, activity of striatal astrocytes, and dopamine release
 - Investigated the role of the direct dopamine receptor D1 (SD1) and indirect D2 expressing (SD2) neurons in Striosomes: Utilized reinforcement learning methods to compute action values, decode them from recorded neuronal and dopamine signals, and identify functional relationships between SD1, and SD2 neuron types, and dopamine release.
- Researcher (PI: Hyung Jin Yoon) Seoul, South Korea
Clinical Big Data Lab, Biomedical Engineering, Seoul National University Sep. 2021 - Dec.2022
 - Predicted health outcomes with electrocardiogram signal: Collected data from the hospital server and predicted mortality, age, type 2 diabetes, and electrolyte abnormalities with a 12-lead electrocardiogram.
 - Developed generative AI model for transferring non-contrast to contrast CT abdomen images.: Developed ML model to diagnose renal cell cancer in non-contrast CT abdomen images.
- ML Developer(Supervisor : Du Hyun Ro) Seoul, South Korea
Seoul National University Hospital Medical Research Center for Innovation Nov. 2020 - Dec. 2022
 - Developed generative AI model for medical image synthesis of knee radiographs images: Pre-processed X-ray knee images and developed GAN, KL-grade classification model for Osteoarthritis knees.
 - Developed software tool that shows arthritis progression by controlling latent space: Found the axis in latent space that represents arthritis progression.

PUBLICATIONS

(*) EQUAL CONTRIBUTION, (†) CORRESPONDING AUTHOR

- Krishnan, S.(*), Ahn, G.(*)(†), and Kim, J. 2026. *Beyond the Flag: Clinical Framing Closes the Moderation Gap in Suicide Risk Measurement*. Proceedings of the 5th Workshop on NLP for Positive Impact (NLP4PI), EMNLP 2026. [Link to : Paper]
- Ahn, G., Li, C., Liang, A., Choi W., Ahn, S., Roberts, C., and Gabrieli, J. D. E. 2026. *Large Language Model Few-Shot Learning for Predicting Individual Treatment Response to Smartphone-Based Mindfulness in Autistic Adults With Anxiety: Secondary Analysis of a Randomized Controlled Trial*. Journal of Medical Internet Research Artificial Intelligence. [Link to : Code , Paper]
- Lazaridis, I., Ahn, G., Hirokane, K., Choi W., and Graybiel, A. M. 2024. *Striatal Astrocytes Influence Dopamine Dynamics and Behavioral State Transitions*, Nature Communications (under review) [Link to preprint: Paper]
- Lazaridis, I., Crittenden, J. R., Ahn, G., Hirokane, K., Yoshida, T., Mahar, A., ... and Graybiel, A. M. 2024. *Striosomes control dopamine via dual pathways paralleling canonical basal ganglia circuits*, Current Biology, 34, 5263-5283.e8. [Link to : Paper , MIT News]

- **Ahn, G.(*)**, Kim, B.(*), Kim, K.K., Kim, H., Lee, E., Ahn, W.Y., Kim, J.W. and Cha, J., 2021. *Identifying Prepubertal Children with Risk for Suicide Using Deep Neural Network Trained on Multimodal Brain Imaging*. In: Shaban-Nejad, A., Michalowski, M., Bianco, S. (eds.) *AI for Disease Surveillance and Pandemic Intelligence*. W3PHAI 2021. Studies in Computational Intelligence, vol 1013. Springer, Cham. [Link to : Code , Paper]
- **Ahn, G.(*)**, Choi, B.S.(*), Ko, S., Jo, C., Han, H.S., Lee, M.C. and Ro, D.H., 2022. *High-Resolution Knee Plain Radiography Image Synthesis Using Style Generative Adversarial Network Adaptive Discriminator Augmentation*. Journal of Orthopaedic Research®. [Link to : Code , Paper]
- Kim, B.G.(*), **Ahn, G.(*)**, Kim, S.(*), Kim, K., Kim, H., Ahn, W.Y., Kim, J.W. and Cha, J., 2021. *Identifying Prepubertal Children with Risk for Suicide Using Deep Neural Network Trained on Multimodal Brain Imaging-Derived Phenotypes*. medRxiv. [Link to : Code , Paper]
- Kim, K., Joo, Y.Y., **Ahn, G.**, Wang, H.H., Moon, S.Y., Kim, H., Ahn, W.Y. and Cha, J., 2022. *The sexual brain, genes, and cognition: A machine-predicted brain sex score explains individual differences in cognitive intelligence and genetic influence in young children.*, Human Brain Mapping. [Link to : Code, Paper]
- Kim, J., Yang, H., Kim, S.H., Kim, S., Lee, J., Ryu, J., Kim, K., Kim, Z., **Ahn, G.**, Kwon, D., Yoon, H., 2024. *Deep learning-based long-term risk evaluation of incident type 2 diabetes using electrocardiogram in a non-diabetic population: a retrospective, multicentre study*, eClinicalMedicine. [Link to : Paper]

ENTREPRENEURSHIP

- **Founder** Cambridge, MA, USA
Wondi.ai, AI for mental health and wellness 2025 - Present
 - **Risk-detection API for conversational AI**: Detects suicidal ideation and self-harm risk in conversation, scored on a graded clinical severity scale grounded in the Columbia Suicide Severity Rating Scale rather than a binary policy flag.
 - **Non-dilutive funding of up to \$70,000**: From MIT Sandbox, the MIT HEALS Researcher 2 Entrepreneur (R2E) grant, and Google for Startups.
- **Founder** Seoul, South Korea
STEM vision scholarship Aug. 2020 - Present
 - **Initial capital contribution**: a total of \$20,000+ so far
 - **Scholarship Vision Settings**: Giving scholarship to high school student prospective engineering leaders, who are under-served and have the most potential, 1K\$ per person
 - **Leader of 30+ STEM members for book publication**: *Wanna be an Engineer*, 20,000+ copies sold
 - **Offered Vision Mentoring**: for 1000+ high school students
- **Co-founder** Boston, USA / Seoul, South Korea
AI Techplay, Artificial Intelligence Education Institute Jan. 2021 - Aug. 2022
 - **Co-found a non-profit organization AI Techplay**: Aiming to foster the next-generation engineers through project-based learning supported by MIT Lincoln Lab and SNU Engineering College.
 - **Launched and organized 1st Autonomous Race car AI Coding Competition**: Serve as an author of first autonomous car control practice book(*AI Python Coding in Easy Words with MIT Autonomous Race Car*)

PUBLICATIONS (NON-ACADEMIC)

- **Ahn, G.** et al.. (2025). "AI Insiders" Smartbooks (ISBN: 9791193674307): The book brings together insights from leading experts at the frontiers of the AI industry and academia, covering breakthroughs in robotics, medicine, drug discovery, and materials science, as well as transformations in creativity, business, and society.
- **Ahn, G.** (2020). "The happiest country in the world, Finland" HarmonyBook (ISBN: 9791189930493): In my quest for understanding happiness, I spent 14 months in Finland. The book reveals how Finland became the happiest country in the world for six consecutive years in the World Happiness Report.
- **Ahn, G.** et al.. (2021). "Wanna be an Engineer". Megastduybooks. (ISBN: 9791129708168): The book provides a glimpse into the professional lives of STEM experts and aims to communicate with the public
- Kim, C., Kim.Y, Kim, J, **Ahn, G.** et al.. (2022). "AI Python Coding in Easy Words with Autonomous Race Car" Hongreung. (ISBN:9791156000488) : The book is a learning resource for the computer programming language Python. It combines appropriate Python content with insights from artificial intelligence experts, discussing the future implications.
- **Ahn, G.** et al.. (2023). "Digital Immigration". in "Living Ideas of the Future Observer" Porche (ISBN: 9791192730905): The book is a Science Fiction novel that imagines a future where we overcome the limitations of human mortality by uploading our neuronal circuitry to a server, enabling us to live forever in a digital utopia

POSTER PRESENTATION

- **Ahn, G.**, Gabrieli, J. *Predicting Suicidal Attempts Using Psychosocial Data: A Foundational model Study from the ABCD Cohort* Society for Neuroscience (SFN) 2025, SanDiego
- **Ahn, G.(*)**, Choi, W.(*), Kim, Z.(*) Kim, D., Ryu, J.(†), Yoon, H(†) *Advances in Renal Cancer CT Imaging: GAN-Enhanced Contrast Visualization and U-Net3+ Based Tumor Detection Techniques*. Korean Society of Artificial Intelligence in Medicine (KoSAIM) 2024 (26, Oct. 2024)
- Lazaridis, I., **Ahn, G.**, Hueske, E., Matsushima, A, Sur, M., Graybiel, A. *Exploitation / Exploration balance: From Striosomes to Dopamine and Astrocytes*. Neuroscience 2023 (11-15, Nov. 2023)
- Lazaridis, I., **Ahn, G.**, Hueske, E., Matsushima, A, Sur, M., Graybiel, A. *Striatal astrocytes in dopamine regulation: A new perspective on behavioral state transitions and interaction with striosomes*. International Basal Ganglia Society (IBAGS)(13-16, June. 2023)
- **Ahn, G.**, Lazaridis, I. Andrews, E. Dowd, S. Puri,A., Graybiel, A. *Dopamine and Astrocytes: A Dynamic Duo Driving Behavioral Engagement or Exploration-Exploitation?* MIT BCS-MIBR-PILM poster presentation 2023 (4, June. 2023)
- **Ahn, G.**, Choi, B.S. Ko, S., Jo, C., Han, H.S., Lee, M.C. and Ro, D.H. *High-Resolution Knee X-ray Image Synthesis Using a Style Generative Adversarial Networks Adaptive Discriminator Augmentation (StyleGAN2-ADA)*. 65th Annual Congress of the Korean Orthopaedic Association 2021 (14-16, Oct. 2021)
- **Ahn, G.**, Choi, B.S., Ko, S., Jo, C., Han, H.S., Lee, M.C. and Ro, D.H. *Generating Images Showing Arthritis Progression by Latent Space Control Using Generative Adversarial Networks*. 2021 Korean Society for Cartilage and Osteoarthritis Summer Symposium (27, Aug. 2021)
- Kim, K., Joo, Y., **Ahn, G.**, Cha, J. *Sex, brains, and individuals: Machine-learned brain sex explains individual-specific cognitive development and its genetic factors in prepuberty children*. Society of Biological Psychiatry. (Apr 29 – May 01, 2021)
- **Ahn, G.**, Kim,B. and Cha, J. *Identifying Prepubertal Children with Risk for Suicides Using Deep Neural Network Trained on Multimodal Brain Imaging*. SfN Global Connectome. (11-13, Jan. 2021)
- **Ahn, G.** *Other Race Effect of Facial Expression Recognition through Machine Learning*. XAICON 2020 sponsored by the Center for Humane AI. (19, Jun. 2020)

HONORS AND AWARDS

- Henry E. Singleton (1940) Fellowship, MIT, awarded in consecutive years for graduate research in brain and cognitive sciences (Sep. 2024 - May 2026)
- Biomedical Global Talent Nurturing Program (\$40,000), for future Biomedical engineers who will lead national society, Korea Health Industry Development Institute (Jan. 2023-Dec. 2023)
- Certificate of Appreciation, Yoo Suk Hong, Dean, College of Engineering, SNU (Sep. 2022) : Appreciation for the contribution of youth scholarship to the education and research foundation
- Engineering Scholarship (\$300), for future engineers who will lead national society, Daesung foundation (Mar. 2022)
- Future Leadership Scholarship (\$4,000), for the future leader who will lead national society, Dojinhwa foundation (Sep. 2021, Mar. 2023)
- Certificate of Appreciation, Kookheon Cha, Dean, College of Engineering, SNU (Jul. 2021) : Acknowledgement of genuine and creative efforts at the forefront of AI education in Korea
- Academic Excellent Scholarship (\$12,000), High GPA, Ilsong Foundation (Mar. 2014 - Feb. 2020)
- Academic Excellent scholarship (\$3,000), High GPA, SNU (Aug. 2018, Feb. 2019)