

# JIHWAN WOO

Seoul, South Korea

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## PROFESSIONAL SUMMARY

Multidisciplinary AI/ML leader with 18+ years of experience spanning research, industry leadership, and cloud-scale AI implementation. Ph.D. in Management of Technology (M.O.T) with specialization in Digital Finance and Technology Valuation, Ph.D. candidate (ABD) in Computer Vision, and MBA in Finance. Proven track record of driving AI innovation across Samsung Research, financial services, and AWS cloud platforms while educating the next generation of AI practitioners as an adjunct professor.

**Core Expertise:** AI/ML Architecture Design | Generative AI & LLMs | MLOps | Computer Vision | Digital Transformation | Technology Valuation | Partner Enablement

## PROFESSIONAL EXPERIENCE

### Amazon Web Services (AWS)

#### Senior Specialist Partner Solutions Architect - AI/ML

May 2025 - Present | Seoul, South Korea

- Drive AI/ML innovation and business value creation across APJ region, empowering C-level executives and technical leaders
- Design scalable AI/ML architectures and develop innovative cloud-based solutions for enterprise customers
- Conduct ML workshops to identify business opportunities and accelerate AI adoption
- Enhance partner capabilities through targeted training programs and technical enablement
- Create thought leadership content on AWS AI/ML services and best practices
- Develop reusable architectures, templates, and reference solutions for partner ecosystem

### CJ OliveNetworks

#### Head of Artificial Intelligence Research

May 2022 - May 2025 (3 years) | Seoul, South Korea

- Led AI research lab, established R&D strategies, and managed internal/external collaborations
- Spearheaded AI-based product development and provided technical support across organization

- Executed government R&D projects and identified new business opportunities
- Key focus areas: MLOps, Generative AI models (including LLMs), AI-based media editing tools, and Data Analytics for smart factories

## **Kakaobank**

### **Manager**

*November 2021 - May 2022 (7 months) | Seoul, South Korea*

- Developed strategic investment processes and evaluated potential investment opportunities
- Pioneered research in emerging technologies including No/Low Code development and Quantum Computing
- Shaped bank's technology strategy and contributed to forward-looking innovation vision

## **Shinhan Bank**

### **Manager - AI Competency Center**

*April 2020 - November 2021 (1 year 8 months) | Seoul, South Korea*

- Pioneered Open Innovation in AI through strategic collaborations with external companies and universities
- Conducted cutting-edge AI research tailored for banking industry applications
- Led development of specialized Finance-oriented Language Model
- Formulated and executed Digital Transformation strategies for Finance Industry
- Led Technical Due Diligence for startups, assessing technological worthiness of investments

## **Samsung Electronics**

### **Staff Engineer**

*September 2010 - April 2020 (9 years 8 months) | Seoul, Korea*

#### **Research for Next-Generation Multimedia:**

- Developed Deep Neural Networks for Super Resolution in Angular resolution and Audio Super Resolution
- Led 3D Point Cloud Compression (PCC) and 6DoF Standardization efforts for MPEG
- Spearheaded HDR Effect and Bit Depth Expansion for mobile displays
- Developed 3D Modeling Algorithms and SLAM for mobile devices

#### **Open Innovation and Technology Investment:**

- Managed open innovation initiatives, identifying and investing in cutting-edge ventures in USA
- Oversaw multiple overseas research centers in Ukraine, Poland, China, USA, Israel

## **Carnegie Mellon University**

### **Visiting Scholar - Robotics Institute**

*April 2013 - March 2014 (1 year) | Pittsburgh, PA, USA*

- Conducted pioneering research in Computer Vision with focus on Video Segmentation

- Sourced and evaluated deals for 50+ cutting-edge technology startups

## Neoplux

### Strategy Consultant

March 2009 - March 2010 (1 year)

- Led Strategy Consulting for International Heavy Industry Company
- Established cost reduction strategies for major shipbuilding subsidiary

## ACADEMIC EXPERIENCE

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### KAIST College of Business

#### Adjunct Professor

December 2022 - February 2025 (2 years 3 months)

- Delivered specialized lectures on Deep Learning for Finance Industry
- Conducted cutting-edge research in AI-based Fintech

### Korea University Graduate School of Management of Technology

#### Adjunct Professor

March 2020 - August 2024 (4 years 6 months)

- Instructed Innovation Strategy courses with AI focus (Machine Learning, Deep Learning for M.O.T)
- Provided technical advisory services to venture companies

## EDUCATION

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**Korea University** - Ph.D., Management of Technology, Digital Finance, and Technology Valuation (2012-2019)

**KAIST College of Business** - MBA, Digital Finance (2020-2022)

**KAIST** - Ph.D. (ABD), Computer Vision (2004-2009)

**KAIST** - M.S., Electrical and Electronics Engineering (2002-2004)

**KAIST** - B.S., Electrical and Electronics Engineering (1998-2002)

## PUBLICATIONS (36+ Publications)

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### Books (6)

- **AI and Beer** (2025) - AI applications in F&B industry
- **Neuro-Symbolic AI** (2025) - Next-generation AI paradigm
- **AI in Literature, Animation, and Masterpieces** (2025, 3 volumes)
- **Data Scientist's Work** (2021) - Practical data science across industries

### Generative AI & LLMs

- "HyDE-Based Multi-Hop Retrieval Approach for Enhancing Retrieval Performance" (2025)
- "Korean Poetry Generation System Based on Artificial Intelligence" (2023)
- "DPUSING: Dual Path U-NETS for Singing Voice Synthesis" (IEEE BigComp 2024)

### AI in Finance

- "Forecasting System Marginal Price Using Financial Data" (Information Systems Review, 2025)
- "Predicting Box Office Success Using AI and Machine Learning" (2025)
- "Deep Learning-Based Palm Oil Price Prediction" (2024)
- "Explainable AI Framework for Financial Rating Models" (ICCP 2021)
- "Credit Rating Model Using Explainable AI" (2021)

### Computer Vision & Deep Learning

- "AI-Driven Component-Level Vehicle Damage Analysis" (IEEE ICCE 2025)
- "AIbody: Integrated Deep Learning Model for Body Measurement" (Electronic Imaging 2023)
- "ORCA: End-to-End Video Object Removal Framework" (Electronic Imaging 2023)
- "GuaRD: Guaranteed Robustness of Image Retrieval System" (PLoS ONE 2023)

### Computer Vision Foundations (2005-2017)

- 10+ papers on Video Segmentation, UAV Navigation, HDR Enhancement, Bit Depth Expansion
- Published in IEEE, IAPR, IS&T conferences

### Industry White Papers (4)

- 2025 Distribution Industry White Paper (Korea Chamber of Commerce)
- 2024/2023 Data Industry White Paper - Finance Sector (Korea Data Agency)
- 2022 Software Industry Annual Report (Software Policy & Research Institute)

## PATENTS (30+ Patents Across 5 Countries)

**Patent Portfolio by Country:** Korea (15) | United States (8) | Europe (4) | China (3) | Japan (1)

### AI & Machine Learning Technologies

- **AI-Powered Video Generation System** (KR 10-2762018, 2025) - AI-based video frame generation and interpolation
- **Neural Network-Based Voice Signal Transmission** (EP4064283A4, 2024; KR 10-2423977, 2022) - Deep learning for audio processing
- **Meat Aging Apparatus Using AI** (US11596159B2, 2023; KR 10-2548435, 2023) - AI-driven food quality assessment

### 3D Vision & Point Cloud Processing

- **3D Data Encoding/Decoding Methods** (Multiple patents: EP3889909B1, KR 10-2640235, 2023-2024) - Point cloud compression for MPEG standardization

- **Point Cloud Processing Methods** (KR 10-2519653, KR 10-2525030, KR 10-2537946, 2023) - Advanced 3D data processing algorithms

### Immersive Media & VR/AR

- **Omni-Directional Image Processing** (Multiple patents: US10664948B2, EP3767959B1, CN110520903B, 2020-2023) - VR content delivery and processing
- **Method for Displaying Images Based on User Motion** (US10755472B2, CN110574369A, 2020-2021) - Motion-based VR interaction
- **VR Content Delivery System** (US11024083B2, KR 10-2063895, 2020-2021) - Real-time VR streaming

### Image Processing & Enhancement

- **Image Processing Device and Method** (EP3767959B1, KR 20-190118926, 2023) - Advanced image filtering
- **Video Segmentation Apparatus** (US9135711, KR 10-2032173, 2015-2019) - Object extraction and tracking
- **3D Image Generation Based on User Interaction** (US9304653B2, KR 10-1953306, 2016-2019) - Interactive 3D content creation

### Consumer Electronics Applications

- **Composite Image Photography** (US9357117B2, JP6292867, CN103916587B, 2014-2019) - Smart camera technology
- **Wearable Device with Projected UI** (US10209513B2, KR 10-2029756, 2019) - AR interface projection

## CERTIFICATIONS

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- AWS Certified Cloud Practitioner
- AWS Certified AI Practitioner
- Fundamentals of Deep Learning (NVIDIA)
- Certificate of Completion for Global Leaders for Innovation and Knowledge
- Training Course on Work Design for Enhancing Public-sector Productivity
- Biotechnology Investment Professional Training Course

## HONORS & AWARDS

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- **Fujitsu Scholarship** - Global Leaders for Innovation and Knowledge (GLIK)
- **Korean Intelligence Robot Competition** - Award Winner
- **Samsung Electronics Corporation Annual Awards** - Software Part
- **Samsung Electronics DMC Research Center Achievement Award**

- **Best Paper Award** - Korea Productivity Association Fall Conference 2018

## TECHNICAL SKILLS

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<b>AI/ML:</b>	Machine Learning, Deep Learning, Generative AI, LLMs, Computer Vision, MLOps, NLP, XAI
<b>Cloud Platforms:</b>	AWS (Bedrock, SageMaker, EC2, S3, Lambda, etc.)
<b>Programming:</b>	Python, R
<b>Specializations:</b>	AI Architecture Design, Technology Valuation, Digital Transformation, FinTech

## LANGUAGES

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**Korean:** Native | **English:** Full Professional Proficiency | **Japanese:** Limited Working | **Chinese:** Elementary