

# Nam-Gyu Cho

## Curriculum Vitae

Department of Brain and Cognitive Engineering  
Korea University

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## Degrees

- 2017 **Ph.D. in Department of Brain and Cognitive Engineering, Korea University, Seoul, Korea.**  
Thesis title: A Novel Linelet-based Representation for Line Segment Detection.  
Advisor: Prof. Seong-Whan Lee and Prof. Alan Yuille
- 2011 **M.S. in Department of Computer and Radio Communications Engineering, Korea University, Seoul, Korea.**  
Thesis title: Adaptive Self-Occlusion Reasoning for 3D Human Pose Tracking from a Monocular Image Sequence  
Advisor: Prof. Seong-Whan Lee
- 2009 **B.S. in Information and Telecommunication Engineering, Incheon National University, Incheon, Korea.**

## Research Experience

- 2017–now **Research Professor, BK21 Plus Center for Brain and Cognitive Engineering, Korea University, Seoul, Korea.**
- 2009–2017 **Graduate Research Assistant, Korea University, Seoul, Korea.**  
Member of the Pattern Recognition group (pr.korea.ac.kr). Participated in national research projects in the areas of computer vision.
- Project:**
- Remote sensing image understanding: geo-localization and change detection (Agency for Defense Development (ADD) and Defense Acquisition Program Administration (DAPA), Korea, 2016–now).
- Individual action and group activity recognition under perception sensor network (Ministry of Knowledge and Economy, Korea, 2012–now).
- Parsing scenes using a hierarchy of context (Ministry of Education, Science and Technology, Korea, 2012–2016).
- Multi-modal human behavior understanding (Ministry of Knowledge and Economy, Korea, 2009–2012)

2013–2014 **Visiting Researcher**, *University of California, Los Angeles, CA, US.*

Member of the Center for Cognition, Vision, and Learning (CCVL), working with Prof. Alan Yuille. Research in computer vision.

**Project:**

Visual Cortex On Silicon: developing geometry estimation and perceptual organization methods for assisting visually impaired people.

PASCAL-Part and PASCAL-Context Datasets: constructing PASCAL-based datasets to provide hierarchical labels of object instances with their semantic parts.

Summer 2011 **Visiting Researcher**, *University of California, Los Angeles, CA, US.*

Member of the Center for Cognition, Vision, and Learning (CCVL), working with Prof. Alan Yuille. Research in computer vision.

**Project:**

Parsing human baseball players: developing a method to parse the hierarchy of baseball players in images.

## Research Interests

Computer vision and machine learning.

## Professional Activities

Journal Peer Reviewing Pattern Recognition (2015–now) and Computer Vision and Image Understanding (2016–now).

## Computer Skills

**Programming**, C/C++, Matlab. Working knowledge of Python and Lua.

## Teaching Experience

2011–2017 **Group Seminar**, Korea University.

Organized Prof. Seong-Whan Lee's group weekly computer vision seminar. Led discussion on several of the presented papers.

2012–2017 **Student Mentoring**, Korea University.

Helped in supervising the research of M.S. students in Prof. Seong-Whan Lee's group. Co-authored several papers with students.

2011–2012 **Graduate Teaching Assistant**, Korea University.

Introduction to Machine Learning Class, Instructor: Prof. Alan Yuille

## Scientific Publications

N.-G. Cho, A. Yuille, and S.-W. Lee, "A novel linelet-based representation for line segment detection," *IEEE Transaction on Pattern Analysis and Machine Intelligence*, (under review – minor revision).

N.-G. Cho, S.-H. Park, J.-S. Park, U. Park, and S.-W. Lee, "Compositional interaction descriptor for human interaction recognition," *Neurocomputing*, (under review).

N.-G. Cho, Y.-J. Kim, U. Park, J.-S. Park, and S.-W. Lee, "Group activity recognition with group interaction zone based on relative distance between human objects,"

*International Journal of Pattern Recognition and Artificial Intelligence*, vol. 29, no. 05, p. 1555007, 2015.

Y.-J. Kim, N.-G. Cho, and S.-W. Lee, "Group activity recognition with group interaction zone," in *22nd International Conference on Pattern Recognition*, pp. 3517–3521, Aug 2014.

R. Mottaghi, X. Chen, X. Liu, N.-G. Cho, S.-W. Lee, S. Fidler, R. Urtasun, and A. Yuille, "The role of context for object detection and semantic segmentation in the wild," in *IEEE Conference on Computer Vision and Pattern Recognition*, pp. 891–898, June 2014.

N.-G. Cho and S.-W. Lee, "Incorporating global and local observation models for human pose tracking," in *IEEE RO-MAN*, pp. 25–30, 2013.

N.-G. Cho, A. Yuille, and S.-W. Lee, "Adaptive occlusion state estimation for human pose tracking under self-occlusions," *Pattern Recognition*, vol. 46, no. 3, pp. 649–661, 2013.

N.-G. Cho, A. Yuille, and S.-W. Lee, "Self-occlusion robust 3d human pose tracking from monocular image sequence," in *Proceedings of IEEE International Conference on Systems, Man and Cybernetics*, pp. 254–257, 2012.

N.-G. Cho, A. Yuille, and S.-W. Lee, "Nonflat observation model and adaptive depth order estimation for 3d human pose tracking," in *Proceedings of IEEE First Asian Conference on Pattern Recognition*, pp. 382–386, 2011.

곽인엽, 조남규, and 이성환, "단안 영상으로부터 복원된 3차원 궤적을 이용한 도심 주행 시나리오에서의 보행자-차량 충돌 예측," in *뇌와 인공지능 하계워크숍*, pp. P–7, 2016.

이상준, 조남규, and 이성환, "'spatio-temporal action descriptor 기반 시점 변화에 강인한 개인 행동 인식,'" in *2015년 한국컴퓨터종합학술대회 논문집*, pp. 841–843, 2015.

조남규 and 이성환, "Linelet 기반 디지털 영상 속 라인 세그먼트 검출," in *2015년 한국컴퓨터종합학술대회 논문집*, pp. 876–878, 2015.

박세호, 조남규, and 이성환, "Actionlet gradient를 이용한 휴먼 상호 행동 인식," in *한국정보과학회 제41회 정기총회 및 동계학술발표회*, 2014.

김영지, 조남규, and 이성환, "개별 휴먼 객체간 거리 변화 특성에 따른 상호 작용 영역 기반의 그룹 행동 인식," in *26회 영상처리 및 이해에 관한 워크샵*, pp. P–145, 2014.

조남규, A. Yuille, and 이성환, "'introduction to ku dataset for object parsing, scene segmentation, and scene 3d geometry estimation,'" in *뇌와 인공지능 심포지엄*, pp. PS–19, 2013.

조남규, A. Yuille, and 이성환, "인체 구성요소 분석을 위한 변형 가능한 구성 모델," in *한국인지과학회 춘계학술대회논문집*, p. 136, 2012.

조남규, A. Yuille, and 이성환, "Hierarchical configural deformable templates for human body parsing under self-occlusion," in *뇌와 인공지능 심포지엄*, 2012.

조남규 and 이성환, "3차원 인체 포즈 추적을 위한 가려짐에 강인한 관측치 모델," in *한국컴퓨터종합학술대회 논문집*, pp. 390–392, 2011.

조남규 and 이성환, "연속적인 단안 영상에서의 3차원 인체 포즈 추적을 위한 적응적인 자체 가려짐 추론 방법," in *제 37회 한국정보과학회 추계학술발표회 발표 논문집*, pp. 348–351, 2010.