Nam-Gyu Cho

Curriculum Vitae

Department of Brain and Cognitive Engineering
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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 **Postdoctoral Researcher**, *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 발표논문집*, pp. 348–351, 2010.