

Curriculum Vitae

A. Personal Identification

Name	Xu Miao
Position	Ph. D., Full-time Researcher of Chung-Ang University
E-mail	miao.knu@gmail.com
Homepage	http://mi.cau.ac.kr/
Address	School of CSE, Chung-Ang Univ., 84 Heukseok-Ro, Dongjak-Gu, Seoul 06974, Korea
Interest	Artificial Intelligence, Intelligent robots, Machine Learning

B. Education

2013 – 2019	Ph.D., School of Robot Engineering, KNU Development of Coverage Path Planning Method Based on Dynamic Map Decomposition for Multi-Cleaning Robot Academic Adviser: Prof. Bo-Yeong Kang
2011 – 2013	M.S., School of Mechanical Engineering, KNU Thesis: Applying the Feature Selection Method for Improvement of Classification Accuracy of Clinical Data Academic Adviser: Prof. Bo-Yeong Kang
2007 – 2009	B.S., College of Software, SYNU(China)

C. Work Experiences

2011, Autumn Semester, Teaching Assistant, School of Mechanical Engineering, KNU
2014, Spring Semester, Teaching Assistant School of Mechanical Engineering, KNU

D. International Publications

D.1. Published from SCI(E) Journals

Xu Miao, Jaesung Lee and Bo-Yeong Kang
Scalable Coverage Path Planning for Cleaning Robots using Rectangular Map Decomposition on Large Environments,
IEEE Access, 6(1):38200-38215, 30 July **2018**
Publisher: IEEE Inc., ISSN: 2169-3536, [HTTP://dx.doi.org/10.1109/ACCESS.2018.2853146](http://dx.doi.org/10.1109/ACCESS.2018.2853146)
Acknowledgment: NRF-2016R1A2B4006873 (Prof. B.-Y. Kang)

Bo-Yeong Kang, **Miao Xu**, Jaesung Lee and Dae-Won Kim
ROBIL: Robot Path Planning Based on PBIL Algorithm,
International Journal of Advanced Robotic Systems, 11(147):1-14, 15 September **2014**
Publisher: InTech Europe, ISSN: 1729-8806, [HTTP://dx.doi.org/10.5772/58872](http://dx.doi.org/10.5772/58872)
Acknowledgment: NRF-2012R1A1A1001969 (Prof. B.-Y. Kang)

D.2. Published from International Journals

Xu Miao, Naveen Senniappan Karupusamy, Bo-Yeong Kang
A Novel Design to Improve the Cooperative Ability of the Multi-Cleaning robot in the Unknown Environment,
Advanced Science Letters, 23(10):9557-9560, 1 December **2017**
Publisher: American Scientific Publishers, ISSN: 1936-6612 (Print),
<https://www.ingentaconnect.com/content/asp/asl/2017/00000023/00000010/art00043>
Acknowledgment: NRF-2016R1A2B4006873 (Prof. B.-Y. Kang)

Naveen Senniappan Karupusamy, **Xu Miao**, Bo-Yeong Kang
Conceptual Design of Multi-Cleaning Robots with Docking Mechanism,
Advanced Science Letters, 23(10):9552-9556, 1 December **2017**
Publisher: American Scientific Publishers, ISSN: 1936-6612 (Print),
<https://www.ingentaconnect.com/search/article?option1=tka&value1=Conceptual+Design+of+Multi.Cleaning+Robots+with+Docking+Mechanism&pageSize=10&index=1>
Acknowledgment: NRF-2016R1A2B4006873 (Prof. B.-Y. Kang)

Lee, Hyun-Soon, **Xu, Miao**, Karuppusamy, Naveen Senniappan, Kang, Bo-Yeong
Continuous Emotion Estimation for Human Machine Interaction,
Advanced Science Letters, 21(3):404-407, 1 March **2015**
Publisher: American Scientific Publishers, ISSN: 1936-6612 (Print),
<https://www.ingentaconnect.com/search/article?option1=tka&value1=Continuous+Emotion+Estimation+for+Human+Machine+Interaction&pageSize=10&index=1>
Acknowledgment: NRF-2012R1A1A1001969 (Prof. B.-Y. Kang)

D.3. Published from International Conferences

Miao Xu, Naveen Senniappan Karupusamy, Bo-Yeong Kang
A New Method of Task Assignment and Co-assistance for Coverage Path Planning of Multi-Cleaning Robots,
The 2'nd International Conference on Advanced Science and Information Technology(ASCIT 2017),
Cheonan, Korea, May **2017** (NRF-2016R1A2B4006873)

Naveen Senniappan Karupusamy, **Miao Xu**, Bo-Yeong Kang
Design and Development of Multi-Cleaning Robots,
The 2nd International Conference on Advanced Science and Information Technology(ASCIT 2017),
Cheonan, Korea, May **2017** (NRF-2016R1A2B4006873)

Miao Xu, Jaesung Lee, Sang-Kyu Bahn and Bo-Yeong Kang
Path Planning for Robot using Population-Based Incremental Learning,
2014 IEEE 4th Ann. Int. Conf. on Cyber Technol. in Autom., Control and Intell. (IEEE-CYBER), pp. 474-476,
Hong Kong, China, 4-7, June **2014** (NRF-2012R1A1A1001969)

Hyun-Soon Lee, **Xu Miao**, Sang-Kyu Bahn, Sung-Ho Kim and Bo-Yeong Kang
Path Planning for Robot using Population-Based Incremental Learning,
The 2014 International Workshop on Computer Software and Services,
Guam, December **2014** (NRF-2012R1A1A1001969)

E. Domestic Publications

E.1. Published from KCI Journals

Xu Miao, Hyun-Soon Lee, Bo-Yeong Kang
Development of Driver's Safety/Danger Status Cognitive Assistance System Based on Deep Learning
Journal of Korea Robotics Society, 13(1):38-44, 9 February **2018**
딥러닝 기반의 운전자의 안전/위험 상태 인지 시스템 개발, 로봇학회논문지
Publisher: 한국로봇학회, ISSN: 1975-6291, [Http://www.jkros.org/journal/list.php](http://www.jkros.org/journal/list.php)
Acknowledgment: NRF- 2016H1D5A1911113 (Prof. B.-Y. Kang)

Xu Miao, Hyun-Soon Lee, Bo-Yeong Kang
Extended BSA Coverage Algorithm for Large Unknown Map
Journal of Korean Institute of Intelligent Systems, 27(5):408-419, October **2017**
큰 맵에 적용가능한 확장된 BSA 커버리지 알고리즘, 한국지능시스템학회 논문지
Publisher: 한국지능시스템학회, ISSN: 2288-2324, [Http://journal.fuzzy.or.kr/#](http://journal.fuzzy.or.kr/#)
Acknowledgment: Kyungpook National University Scholarship (Prof. B.-Y. Kang)

E.2. Published from Domestic Journals

Miao Xu, Jaesung Lee
A Comparison of Multi-label Instance Selection Methods using Problem Transformation Approach for Music Emotion Recognition
Journal of AI Humanities, 1(1):97-123, 30 April **2018**
음악감성 인식 정확도 향상을 위한 노이즈 제거 기술의 효과 비교 연구, 인공지능인문학연구
Publisher: 중앙대학교 인문콘텐츠연구소
Acknowledgment: NRF-2017S1A6A3A01078538 (Prof. C.-K Lee)

E.3. Published from Domestic Conferences

Miao Xu, Hyun-Soon Lee, Bo-Yeong Kang
Coverage Path Planning for Cleaning Robot Using Dynamic Decomposition
동적 분할을 이용한 청소 로봇 커버리지 경로계획, 한국정보과학회 2015 한국컴퓨터종합학술대회 논문, 823-825, 2015.06

Miao Xu, Sang-Kyu Bahn, Bo-Yeong Kang
Robot Path Planning Based on Probabilistic Evolutionary Approach
확률적 진화 접근에 기반한 이동로봇 경로계획, 대한기계학회 2012년도 추계학술대회 논문, 1157-1162, 2012.11

F. Patents

F.1. Registered Patent

Bo-Yeong Kang, **Miao Xu**, Hyun-Soon Lee
Extended BSA Coverage Path Planning Apparatus, Method and Recording Medium,
확장된 BSA 커버리지 경로계획 장치, 방법 및 기록 매체
Code: 10-2017-0182722, **Korea**, 28 December **2017**

Bo-Yeong Kang, **Miao Xu**, Sang-Kyu Bahn
Apparatus to Generate Route using Genetic Algorithm and Operating Method Thereof,
유전자 알고리즘을 이용한 경로 생성 장치 및 그 동작 방법
Code: 1020120143793, **Korea**, 21 August **2014**

G. Projects

2016 - 2018 The Development of Self-Assembly Multi-Cleaning Robot, NRF
자조립형 청소 로봇 개발, 미래창조과학부 (한국연구재단), 학생참여
2016 - 2018 Deep Learning based Active Switching Technology for Driving Modes in Autonomous, NRF
자율주행차에서 딥러닝기반 능동적 운전모드 전환 기술 개발, 미래창조과학부 지역신산업 (한국연구재단), 학생참여

2016 - 2017	Inter-cultural Korean Music Discovery based on Pluralistic Music Emotion, NRF 다원주의적 음악감성 기반 문화호환적인 한국형 음악 발굴 연구, 미래창조과학부(한국연구재단), 학생참여
2015 - 2016	Music Map: Investigating Relation of Meta Information for Music Recommendation, NRF 뮤직 맵: 메타 정보 상관성 도출 및 시각화 기술을 이용한 음악 추천 서비스 개발, 교육부(한국연구재단), 학생참여
2012 - 2014	Child Monitoring Humanoid with Emotional Interaction Capacity, NRF 감성적 상호작용이 가능한 아동 모니터링 휴머노이드 로봇 개발, 교육부(한국연구재단), 학생참여
2011 - 2012	An English education robot capable of emotional interaction with elementary school seniors, KNU 초등학교 3 학년을 대상으로 감성적 상호작용이 가능한 영어교육 로봇 제작, 교내연구(경북대학교), 학생참여

H. Honors and Awards

2016	Excellence Award (WISER) Kyungpook National University
2015	Excellence Award (WISER) Kyungpook National University
2015	Kyungpook National University Scholarship
2014	Kyungpook National University Scholarship
2013	Kyungpook National University Scholarship