김석현(金晳賢) 이력서

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학력

- 2013 년 7 월 – 2017 년 11 월 **UNSW Sydney* 공학박사** (수자원/환경 원격탐사)
  ** UNSW Sydney 순위 (2021) – QS (종합): 44 위; QS (토목공): 12 위; AWRU (수자원): 5 위*
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- 2006 년 3 월 – 2008 년 2 월 **고려대학교 사회환경시스템공학과 공학석사** (수자원시스템공학)
  - 학위논문: "Study for improving water distribution system reliability" (영문)
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- 1997 년 3 월 – 2001 년 2 월 **고려대학교 토목환경공학과 공학사**

주요경력

- 2017 년 4 월 – 현재 UNSW Water Research Centre 박사후 연구원
- 2013 년 7 월 – 2017 년 3 월 UNSW Sydney 박사과정 (논문제출: 2017/3; 학위수여: 2017/11)
- 2008 년 1 월 – 2013 년 7 월 **현대건설** 대리 토목설계실 수자원/환경 설계담당

병역사항

- 2001 년 10 월 – 2004 년 9 월 **대한민국육군** (중위 만기전역)

수상 및 장학금 수혜

- 2021 년 5 월 UNSW Sydney Strategic Research Fund (AUD 4,000)
- 2017 년 5 월 – 2017 년 8 월 UNSW Sydney Postgraduate Writing Fellowship (AUD 6,500)
- 2013 년 7 월 – 2017 년 1 월 UNSW Sydney Tuition fee & top-up Scholarship
- 2007 년 가을학기 **고려대학교** 조교장학금
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논문실적

[IF: Impact Factor/C: #Citations from Google Scholar]

❖ **학술지 논문**

[1] Kim S., Mehrotra R., **Kim S.**, Sharma A. (2021) Probabilistic forecasting of Cyanobacterial concentration in riverine systems using environmental drivers, *Journal of Hydrology*, 593, 125626, **[IF:4.405/C:0]**

[2] Zhang R., **Kim S. [corr-auth]**, Sharma A., Lakshmi V. (2021). Identifying relative strengths of SMAP, SMOS-IC, and ASCAT to capture temporal variability using a model combination approach, *Remote Sensing of Environment*, 252, 112126, **[IF:8.218/C:2]**

[3] **Kim S.**, Anabalón A., Sharma A. (2021) An Assessment of Concurrency in Evapotranspiration Trends Across Multiple Global Datasets, *Journal of Hydrometeorology*, 22(1), 231-244, **[IF:3.891/C:0]**

[4] **Kim S.**, Pham H., Liu Y., Marshall L., Sharma A. (2020). Improving the combination of satellite soil moisture datasets by considering error cross-correlation: A comparison between triple collocation (TC) and extended double instrumental variable (EIVD) alternatives, *IEEE Transactions on Geoscience and Remote Sensing*, Published (online), **[IF:6.120/C:1]**

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[6] Kim S., **Kim S.[corr-auth]**, Mehrotra R., Sharma A. (2020). Predicting cyanobacteria occurrence using climatological and environmental controls, *Water Research*, 175, 115639, **[IF:7.913/C:4]**

[7] Kim T., Ley T., Kang S., Davis J., **Kim S.**, Amrollahi P. (2020). Using Particle Composition of Fly Ash to Predict Strength and Resistivity of Concrete, *Cement and Concrete Composites*, 107, 103493, **[IF:5.127/C:6]**

[8] **Kim S.**, Ajami H., Sharma A. (2020). Using remotely sensed information to improve vegetation parameterization in a semi-distributed hydrological model (SMART) for upland catchments in Australia, *Remote Sensing*, 12(18), 3501, **[IF: 4.509/C:0]**

[9] Moradi S., Agostino A., Gandomkar Z., **Kim S.**, Hamilton L., Sharma A., Henderson R., and Leslie G. (2020). Quantifying natural organic matter concentration in water from climatological parameters using different machine learning algorithms, *H2Open Journal*, 3(1), 328-343, **[IF: NA/C:1]**

[10] **Kim S.**, Eghdamirad S., Sharma A., Kim J. H. (2020). Uncertainty Quantification of uncertainty in projections of extreme daily precipitation, *Earth and Space Science*, 2020, e2019EA001052-T, **[IF: 2.15/C:3]**

[11] Hagan D., Wang G., **Kim S.**, Parinussa R., Liu Y., Ullah W., Bhatti S., Ma X., Jiang T., Su B. (2020). Maximizing Temporal Correlations in Long-Term Global Satellite Soil Moisture Data Merging, *Remote Sensing*, 12 (13), 2164, **[IF: 4.509/C:4]**

[12] **Kim S.**, Zhang R., Pham H., Sharma A. (2019). A review of satellite-derived soil moisture and its usage for flood estimation, *Remote Sens Earth Syst Sci*, 2, 225–246, **[IF: NA/C:5]**

[13] Pham H., **Kim S.**, Johnson F., Marshall L. (2019). Using 3D robust smoothing to fill land surface temperature gaps at the continental scale, *Int J Appl Earth Obs Geoinf*, 82, 10879, **[IF:4.846/C:7]**

[14] **Kim S.**, Jun H. D., Yoo D. G., Kim J. H. (2019). A framework for improving reliability of water distribution systems based on a segment-based minimum cut-set approach, *Water*, 11(7), 1524, **[IF:2.524/C:2]**

[15] Zhang R., **Kim S.[corr-auth]**, Sharma A. (2019). A comprehensive validation of the SMAP Enhanced Level-3 Soil Moisture product using ground measurements over varied climates and landscapes, *Remote Sensing of Environment*, 223, 82-94, **[IF:8.218/C:36]**

[16] **Kim S.**, Sharma A. (2019). The role of floodplain topography in deriving basin discharge using passive microwave remote sensing, *Water Resources Research*, 55(2), 1707-1716, **[IF:4.14/C:7]**

[17] Khan U., Ajami H., Tuteja N., Sharma A., **Kim S.** (2018). Catchment Scale Simulations of Soil Moisture Dynamics Using an Equivalent Cross-Section based Hydrological Modelling Approach, *Journal of Hydrology*, 564, 944-966, **[IF:4.405/C:11]**

[18] **Kim S.**, Paik K., Johnson F., Sharma A. (2018). Building a flood warning framework for ungauged locations using low resolution, open access remotely sensed surface soil moisture, precipitation, soil and topographic information, *IEEE J. of Selected Topics in Applied Earth Observations and Remote Sensing*, 11(2), 375-387, **[IF:3.392/C:17]**

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[22] **Kim S.**, Parinussa R., Liu Y., Johnson F., Sharma A. (2015). A framework for combining multiple soil moisture retrievals based on maximizing temporal correlation, *Geophysical Research Letters*, 42 (16), 2015GL064981, **[IF:4.58/C:31]**

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❖ 컨퍼런스 논문

[1] M. Young, J. Hayman-Joyce, **S. Kim**. (2012). Use of Single Layer Concrete Armour Units as Toe Reinforcement, *Proceedings of the Coastal Engineering Conference*, 1 (33), 48, **[IF: NA/C:3]**

학술대회 발표 실적 (주발표자)

[1] **Kim S.**, Zhang R., Sharma A., Lakshmi V. Improvements of satellite observations through data merging: status and challenges, *American Geophysical Union (AGU) fall meeting 2020*, San Francisco, CA, USA

[2] **Kim S.**, Pham H., Liu Y., Sharma A., Marshall L. Combining geophysical variables for maximizing temporal correlation without reference data, *The 23rd International Congress on Modelling and Simulation (MODSIM2019)*, Canberra, Australia

[3] **Kim S. [초청]**, Guo Y., Wasko C., Sharma A. On soil moisture, rain and flood extremes in a warming climate – using satellite remote sensing to define future antecedent conditions, *The Korean Society of Climate Change Research (KSCC) 2018*, Jeju, Republic of Korea

[4] **Kim S.**, Ajami H., Sharma A. Incorporating an operational satellite-derived leaf area index into a computationally efficient semi-distributed hydrologic modelling application (SMART), *The 22nd International Congress on Modelling and Simulation (MODSIM2017)*, Hobart, Australia

[5] **Kim S.**, Liu Y., Johnson F., Sharma A. A temporal correlation-based approach for spatial disaggregation of remotely sensed soil moisture, *American Geophysical Union (AGU) fall meeting 2016*, San Francisco, CA, USA

[6] **Kim S.**, Liu Y., Johnson F., Parinussa R., Sharma A. Reducing Structural Uncertainty in AMSR2 Soil Moisture Using a Model Combination Approach, *American Geophysical Union (AGU) fall meeting 2014*, San Francisco, CA, USA

[7] **Kim S.**, Liu Y., Johnson F., Parinussa R., Sharma A. Improvement of Soil Moisture Dataset Combining AMSR2 Soil Moisture Products, *The Australian Energy and Water Exchange Initiative (OzEWEX) 2014*, Canberra, ACT, Australia

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연구경력

- 2017 년 4 월 – 현재: UNSW Water Research Centre 박사후 연구원
  - 장기간 시계열 데이터 해석을 통한 온도-유량, 온도-강우량 상관관계 규명
  - 수온, 유속 및 총인(總燐) 시계열 데이터를 활용한 한국 4 대강 녹조발생 예측 모형 개발
  - 원격탐사 데이터를 적용한 GIS 기반 수문 모형 개선 및 검증
  - 원격탐사 데이터를 이용한 홍수 모니터링 방법 개선 및 검증
  - 원격탐사기반 환경데이터 해석, 검증 및 개선 (공간해상도, 정확도)
- 2013 년 7 월 – 2017 년 3 월: UNSW Sydney 박사과정
  - 원격탐사 강우 및 토양습윤 데이터를 활용한 홍수 예측 방법 개발
  - 원격탐사 식생지표를 활용한 토양습윤 데이터의 공간 해상도 향상
  - 원격탐사 데이터 합성을 통한 데이터 성능 향상
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- 2006 년 3 월 – 2008 년 2 월 **고려대학교** 석사과정
  - 상수관망의 신뢰도 개선 및 최적화

교육경력

- 2017 년 4 월 – 2020 년 3 월 UNSW Sydney Post-doctoral teaching assistant
  - 담당과목: Catchment and Water Resources Modelling, Water Resources Engineering
  - 코디네이팅 및 컨설팅 (620 명), 강의, 강의 및 평가자료 준비, Moodle(수업관리시스템) 관리

- 석사(연구) 연구지도 (1 명): 논문 2 편 게재 (논문번호 [1] [6])
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- 2013 년 7 월 – 2017 년 3 월 **UNSW Sydney** 조교
- 2006 년 3 월 – 2007 년 12 월 **고려대학교** 조교

학술활동

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참여프로젝트

- 박사후 연구원
  - 2020 년 4 월 – 현재: Australian Research Council (ARC) Discovery Project (DP) / *Assessing Water Supply Security in a Nonstationary Environment* (DP200101326)
  - 2019 년 5 월 – 2020 년 4 월: ARC DP / *A Fourier approach to address low-frequency variability bias in hydrology* (DP180102737)
  - 2017 년 4 월 – 2019 년 5 월: ARC Linkage Project / *Adapting catchment monitoring and portable water treatment to climate change* (LP160100620)
- 박사과정
  - 2013 년 7 월 – 2017 년 3 월: ARC DP / *Reducing Flood Loss -Data Assimilation Framework for Improving Forecasting Capability in Sparsely Gauged Regions* (DP140102394)
  - 2015 년 5 월 – 2015 년 5 월: NASA SMAP 토양습윤 데이터 검증 캠페인 (현장 데이터 측정) / Soil Moisture Active Passive Experiment – the 4th campaign (SMAPEx-4)

참고인 목록

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- **Professor Yi Y. Liu** (박사과정 지도교수, co-supervisor): School of Geographical Sciences, Nanjing University of Information Science and Technology (NUIST), yi.liu@nuist.edu.cn
- **Dr. Raj Mehrotra** (연구실 선임 연구원): School of Civil and Environmental Engineering, UNSW Sydney, Sydney, raj.mehrotra@unsw.edu.au
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