

Research Publications

Journal Articles

1. Xiong, X., Chu, Y., **Udai, A. D.**, Kamal, S., Jin, S., & Lou, Y., (2021). Implicit Discrete-Time Terminal Sliding Mode Control for Second-Order Systems. *IEEE Transactions on Circuits and Systems II: Express Briefs*, Volume: 68, Issue: 7, 2508 – 2512.
2. Dutta, A., Salunkhe, D. H., Kumar, S., **Udai, A. D.**, & Suril, V. S. (2019). Sensorless Full Body Active Compliance in a 6 DOF Parallel Manipulator. *Robotics and Computer-Integrated Manufacturing*, 59, 278–290.
3. **Udai, A. D.** & Saha, S. K. (2018). Dynamic Simulation of Serial Robots under Force Control. *Int. Journal of Intelligent Machines and Robotics*, 1(1), 79–108.
4. **Udai, A. D.**, Saha, S. K., & Dayal, A. (2018). Overlaid Orthogonal Force Oscillations for Robot Assisted Localization and Assembly. *ISME Journal of Mechanics and Design*, 2(1), 9–25.

Conference Proceedings

1. **Udai, A. D.**, Biswas, S., & Penisetty, S. A. (2019, October). Synthesizing Unnatural Grasping in Humanoid Robots using Fuzzy Logic. In *28th IEEE International Conference on Robot and Human Interactive Communication*. New Delhi, India (Accepted).
2. **Udai, A. D.**, Biswas, S., & Kumar, G. (2018, December). A Hardware-in-a-Loop Setup for Benchmarking Robot Controllers. In *Int. Conf. on Computational Intelligence (ICCI 2018)*. BIT Mesra, Ranchi, India.
3. **Udai, A. D.**, Salunkhe, D. H., Dutta, A., & Mukherjee, S. (2017, June). Force/Position Control of 3-DoF Delta Manipulator with Voice Coil Actuator. In *Advances in Robotics (AIR 2017)*. IIT Delhi, New Delhi, India.
4. Ranjan, A., Kumar, U., Laxmi, V., & **Udai, A. D.** (2017, February). Identification and Control of NAO Humanoid Robot to Grasp an Object using Monocular Vision. In *2nd. IEEE Int. Conf. on Electrical, Computer and Communication Technologies (IEEE ICECCT 2017)* (pp. 1–5). Coimbatore, Tamil Nadu, India.
5. **Udai, A. D.** & Saha, S. K. (2016, December). A Framework for CAD-Based Offline Depth-Map Preparation for Automated Assembly Tasks. In *Int. Conf. on Robotics and Automation for Humanitarian Applications (RAHA 2016)* (pp. 244–249). Kerala, India.
6. **Udai, A. D.**, Saha, S. K., Joshi, R. P., & Sadanand, R. (2016, November). Force Control of Robot Manipulator using Industrial Servo Drives. In *Int. Conf. on Evolution in Manufacturing (ICEM 2016)* (pp. 313–318). Ranchi, India.
7. Hayat, A. A., **Udai, A. D.**, & Saha, S. K. (2016a, January). Identifying and Updating the Kinematics of KUKA iiwa R800 in CAD for Accurate Simulation. In *28th Int. Conf. on CAD/CAM, Robotics and Factories of the Future (CARS & FoF 2016)* (pp. 115–126). Kolaghat, West Bengal, India.
8. **Udai, A. D.** & Sinha, A. N. (2015a, December). A Quantitative Error Map Generation for Modification of Manual Socket for Below Knee Amputee. In *1st. Int. Conf. on Computational Intelligence (ICCI 2015)* (pp. 383–391). BIT Mesra, Ranchi, India.
9. **Udai, A. D.**, Joshi, R. P., & Saha, S. K. (2015, September). Depth-based Localization for Robotic Peg-in-Tube Assembly. In *IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS 2015)* (pp. 3538–3543). Hamburg, Germany.

10. **Udai, A. D.**, Hayat, A. A., & Saha, S. K. (2014, September). Parallel Active/Passive Force Control of Industrial Robots with Joint Compliance. In *IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS 2014)* (pp. 4511–4516). Chicago, Illinois.
11. Abhishek, V., Hayat, A. A., **Udai, A. D.**, & Saha, S. K. (2014, June). Experimental Identification of an Industrial Manipulator Dynamic Parameters. In *The 3rd Joint Int. Conf. on Multibody System Dynamics (IMSD 2014) and The 7th Asian Conf. on Multibody Dynamics (ACMD 2014)*. Busan, Korea.
12. Hayat, A. A., **Udai, A. D.**, & Saha, S. K. (2013, December). Kinematic-Chain of an Industrial Robot and Its Torque Identification for Gravity Compensation. In *1st Int. and 16th National Conf. on Machines and Mechanisms (iNaCoMM 2013)*. IIT Roorkee.
13. **Udai, A. D.** & Saha, S. K. (2013, October). A Current-Sensing based Controller for Brushed DC Motors for Robotic Applications. In *The 3rd IFToMM Int. Symposium on Robotics and Mechatronics, (ISRM 2013)* (pp. 230–239). Singapore.
14. Hayat, A. A., Chittawadigi, R., **Udai, A. D.**, & Saha, S. K. (2013, July). Identification of Denavit-Hartenberg Parameters of an Industrial Robot. In *Advances in Robotics, Int. Conf. of Robotics Society of India, (AIR 2013)* (pp. 1–6). R & DE (Engrs.), Pune.
15. **Udai, A. D.** & Saha, S. K. (2012, December). Simulation of Force Control Algorithms. In *IEEE/SICE Int. Symposium on System Integration (SII 2012)* (pp. 481–486). Fukuoka, Japan.
16. **Udai, A. D.** & Sinha, A. N. (2008, December). Processing Magnetic Resonance Images for CAD Model development of Prosthetic Limbs Socket. In *IEEE Region 10 and the 3rd. Int. Conf. on Industrial and Information Systems (ICIIS 2008)* (pp. 1–5). IIT Kharagpur.
17. **Udai, A. D.** (2008a, July). Optimum Hip Trajectory Generation of a Biped Robot During Single Support Phase Using Genetic Algorithm. In *1st IEEE Int. Conf. on Emerging Trends in Engg. and Tech. (ICETET 2008)* (pp. 739–744). Nagpur.
18. **Udai, A. D.** & Sinha, A. N. (2007a, January). Development Of Artificial Limb Surface Using Reverse Engineering Method. In *Int. Conf. on Advances in Machine Design & Industry Automation (ICAMDIA 2007)* (pp. 519–522). Pune.
19. **Udai, A. D.** & Sinha, A. N. (2006, July). A Serial Port Interface Circuit for Robotic Control Applications Involving Multiple Stepper Motors. In *22nd Int. Conf. on CAD/CAM Robotics and Factories of the Future*. VIT Vellore.

Books and Chapters

1. Hayat, A. A., **Udai, A. D.**, & Saha, S. K. (2016b). *CAD/CAM, Robotics and Factories of the Future: Identifying and Updating the Kinematics of KUKA iiwa R800 in CAD for Accurate Simulation* (D. K. Mandal & C. S. Sanyal, Eds.). Lecture Notes in Mechanical Engineering. Springer, India.
2. **Udai, A. D.** & Sinha, A. N. (2015b). *Advances in Computational Intelligence. Advances in Intelligent Systems and Computing: A Quantitative Error Map Generation for Modification of Manual Socket for Below Knee Amputee* (S. K. Sahana & S. K. Saha, Eds.). Lecture Notes in Mechanical Engineering. Springer, Singapore.
3. Sinha, A. N. & **Udai, A. D.** (2008). *Computer Graphics*. Tata McGraw Hill Publishing Co. Ltd., New Delhi, India.

Technical Publications

Magazine Articles

1. **Udai, A. D.** & Kumar, S. (2013, October). Make your own USB Data Acquisition System. In S. Theo (Ed.), *Electronics For You*. New Delhi, India.

2. **Udai, A. D.** (2012, September). AVR Bootloader Circuit for Trouble-free Programming. In S. Kumar (Ed.), *Electronics For You*. New Delhi, India.
3. **Udai, A. D.** (2011a, August). Interfacing Sensor with ADC of AVR Microcontroller. In S. Kumar (Ed.), *Electronics For You*. New Delhi, India.
4. **Udai, A. D.** (2011b, July). Serial Communications with AVR Microcontroller. In S. Kumar (Ed.), *Electronics For You*. New Delhi, India.
5. **Udai, A. D.** & Mohan, B. (2011, June). AVR Programming using AVR 910 Protocol. In S. Kumar (Ed.), *Electronics For You*. New Delhi, India.
6. **Udai, A. D.** (2011c, March). Storing Data on I2C EEPROM using AVR microcontroller. In S. Theo (Ed.), *Electronics For You*. New Delhi, India.
7. **Udai, A. D.** (2011d, February). Interfacing Nokia Colour LCD With AVR Microcontroller. In S. V. N. Harish (Ed.), *Electronics For You*. New Delhi, India.
8. **Udai, A. D.** (2011e, January). A Beginners' Guide to ATMEL AVR Development. In S. Kumar (Ed.), *Electronics For You*. New Delhi, India.
9. **Udai, A. D.** (2010, November). Creating Professional Circuit Designs Using NI Circuit Design Suite. In *Electronics For You*. New Delhi, India.
10. **Udai, A. D.** (1999, June). Advanced QuickBasic Drawing Tool. In *Electronics For You*. New Delhi, India.

Application Journals

1. **Udai, A. D.** (2008b). An Inexpensive AVR Controlled 16-Channel Serial Servo Motor Controller Design for Robotic Applications. Vol. 10. Summer 2008.
2. **Udai, A. D.** & Sinha, A. N. (2007b). Constructing 16 Channel Bluetooth wireless Servo Motor Controller. Vol. 9. Fall 2007.