

May 11, 2020

Re: Letter of Recommendation of Mr. Nathan Ryley Tharp for the Mechanical Engineering Position.

To whom it may concern,

I am simply delighted to recommend Mr. Nathan Ryley Tharp for the Mechanical Engineering position. As his Senior Capstone Design project advisor at the University of Texas at Tyler (UT Tyler), I am very familiar with his professional expertise and his personality.

I have been an assistant professor in the Mechanical Engineering Department of UT Tyler since the Fall Semester of 2015. Prior to joining UT Tyler, I worked as a senior research associate in the Systems Realization Laboratory at the University of Oklahoma from 2012 to 2015. I served for the Korean government after I received a Ph.D. degree from the Georgia Institute of Technology in 2002.

I have diverse professional experiences, gained throughout 10+ years of industry and academic endeavors. I am a member of ASME, ASEE, and the board of directors in the materials and fracture group in the Korean Society of Mechanical Engineers.

My primary research interests include computer-aided integrated design and manufacturing, robotics, fatigue analysis, and advanced finite element analysis. I am currently working on robotic medical device design, coronary stents design using shape memory alloys, and I also work for establishing the artificial intelligence-based framework of modeling and simulations in connection with robotic vision and control. I have published one book, two book chapters, one technical patent (in progress) and more than 50 peer-reviewed journal and proceeding papers and presentations.

I am well qualified to make this recommendation. I have no reservations in stating that Mr. Tharp is truly an exceptional researcher with multi-disciplinary skills and abilities. He stands out as one of the most capable students during my teaching career.

Relationship with Mr. Tharp

I first met him in his Junior year in the Fall of 2018 and I have taught him in six courses. I remember that he was always ranked in the top of the class in my courses. Specifically, his sense of design and ability were excellent, compared to other students. For instance, his team won the 1st prize in the design competition in MENG 3309 (Mechanical Systems Design). Mr. Tharp was a good communicator as well as a promising leader in his team. Since then, he has joined in my research project team to develop a robot assisted rehabilitation device, dubbed the “Robotic Walking Training Device (RWTD).”

As his faculty advisor for the Senior Capstone Design project at UT Tyler, I recognize Nathan’s intellectual curiosity and commitment as the qualities of a good student, and one that can handle a rigorous academic environment. He did good job in keeping track of teamwork during his senior season. In addition, he has performed feasibility analysis using finite element analysis (FEA) and design optimization for the RWTD. His research work will help in bridging the gap and timeline in meeting customer’s performance requirements by serving as a tool for designing materials that are feasible with optimum performance capability for any engineering need.

Mr. Tharp' Eligibility

Nathan has thrown insightful questions and proposed creative ideas in his research involvement in one of my teaching courses, MENG 4312 (System Dynamics and Control). I believe that he is able to find the research gap and its solution by himself which reflects his independent research ability and a deep passion for research in his professional career. Apart from his research passion, Nathan has the right set of skills, intellect and hardworking personality to achieve success. He has displayed a high degree of integrity, responsibility, and ambition in my classes as well as the research group.

Mr. Tharp is capable of coming up with his own research plan, articulating the method and producing excellent results through critical thinking. He also has ability to absorb new information and work as a professional engineer.

Nathan is a diligent student, but also pleasant and down-to-earth. I can always count on him to complete any assignment to the best of his abilities. He is also very cooperative and willing to work in a group setting. He has mentored several undergraduate students in my research group as a group leader. Mr. Tharp was one of the best leaders in my senior design group.

Concluding Remarks

I believe that Nathan is a potential interdisciplinary engineering researcher and designer whose background, interests, and accomplishments reflect exemplary ability in design and manufacturing, combined with FEA and design optimization. I can gladly offer my wholehearted endorsement of Mr. Nathan Tharp, because I know that he will do everything in his power to be successful.

Sincerely yours,



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