

# 2025 NCTS Student Workshop on Scientific Computing Schedule

**Date: May 3, 2025**

|             |                                                                                                                                               |                        |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 10:00–10:30 | Registration                                                                                                                                  |                        |
| 10:30–10:40 | Opening                                                                                                                                       |                        |
| 10:40–10:55 | <i>A TV-L2 Variational Model for Robust Optical Flow Estimation Under Inhomogeneous Illumination</i>                                          | <b>Ku-Te Lin</b>       |
| 10:55–11:10 | <i>An Introduction to the Mathematics of Score-Based Generative Models</i>                                                                    | <b>Chan-Jung Hsu</b>   |
| 11:10–11:25 | <i>Efficient Sampling Strategies for Diffusion Models</i>                                                                                     | <b>Bi-Cheng Gu</b>     |
| 11:25–11:40 | Break                                                                                                                                         |                        |
| 11:40–11:55 | <i>Stretch Energy Minimization Applied to Area-Preserving Mapping of Point Clouds</i>                                                         | <b>Tzu-Ching Liang</b> |
| 11:55–12:10 | <i>Classification of CDKN2A/B Homozygous Deletion in Brain Tumors Using Optimal Mass Transport, Deep Learning Segmentation, and Radiomics</i> | <b>Hung-Yang Lin</b>   |
| 12:10–13:20 | Lunch Break                                                                                                                                   |                        |
| 13:20–13:35 | <i>Neural Network with Discontinuous Architecture</i>                                                                                         | <b>Tan Wang</b>        |
| 13:35–13:50 | <i>Single-Image Inpainting via Sparse Representation and Color-Vectorized Dictionary Learning</i>                                             | <b>Tai-Hua Lee</b>     |
| 13:50–14:05 | <i>Image Segmentation for Parasite Classification</i>                                                                                         | <b>Yi-Ru Chen</b>      |

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| <b>14:05–14:20</b> | <b>Break</b>                                                                                                           |                       |
| <b>14:20–14:35</b> | <i>Optimal Control Design for Nonlinear Systems Using State-Dependent and Riccati Equation Methods</i>                 | <b>Chung An Chen</b>  |
| <b>14:35–14:50</b> | <i>Solving the Poisson Equation via a Hybrid Approach of PINNs and ADMM</i>                                            | <b>Wei Yuan Hsiao</b> |
| <b>14:50–15:05</b> | <i>Unravelling the Mysteries of Sounds in Magdalena Valley</i>                                                         | <b>Chu-Ping Hsiao</b> |
| <b>15:05–15:20</b> | <b>Break</b>                                                                                                           |                       |
| <b>15:20–15:35</b> | <i>Quantum Channel Search</i>                                                                                          | <b>Su-Yi Chen</b>     |
| <b>15:35–15:50</b> | <i>Index Search for Solving Least-Squares Problems from Adaptive Variational Models in Low-Light Image Enhancement</i> | <b>Chang-En Du</b>    |
| <b>15:50–16:30</b> | <b>Free Discussion</b>                                                                                                 |                       |