

## ICAR 2003 Program at a Glance

**Sunday 29 - June - 2003**

|               |                                                               |                                                   |
|---------------|---------------------------------------------------------------|---------------------------------------------------|
|               | ISR                                                           |                                                   |
| 9.00 - 10.40  | Tutorial on <i>Multisensor Information Fusion</i>             |                                                   |
| 10.40-11.00   | Coffee Break                                                  |                                                   |
| 11.00 - 12.30 | Tutorial on <i>Multisensor Information Fusion</i>             |                                                   |
| 12.30-14.00   | Lunch                                                         |                                                   |
| 14.00 - 15.20 | Workshop on <i>Integration of Vision and Inertial Sensors</i> | Tutorial on <i>Multisensor Information Fusion</i> |
| 15.20 - 15.40 |                                                               | Coffee Break                                      |
| 15.40-16.00   | Coffee Break                                                  | Tutorial on <i>Multisensor Information Fusion</i> |
| 16.00 - 17.30 | Workshop on <i>Integration of Vision and Inertial Sensors</i> |                                                   |
| 17.30 - 19.15 |                                                               |                                                   |

**Monday 30 - June - 2003**

|             |                                                                                                               |                             |                                                        |                                                                    |                            |                        |
|-------------|---------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------|--------------------------------------------------------------------|----------------------------|------------------------|
|             | <b>Auditorium</b>                                                                                             | <b>Amphitheater C.4</b>     | <b>Room C.1</b>                                        | <b>Room C.2</b>                                                    | <b>Room C.3</b>            | <b>Room E.1</b>        |
| 8.00 - 9.00 | Registration                                                                                                  |                             |                                                        |                                                                    |                            |                        |
| 9.00-10.30  | <b>Opening Ceremony</b><br><b>Plenary Lecture 1: Paolo Dario - <i>Perspectives of Biomedical Robotics</i></b> |                             |                                                        |                                                                    |                            |                        |
| 10.30-10.50 | Coffee Break                                                                                                  |                             |                                                        |                                                                    |                            |                        |
| 10.50-12.30 | MI-1<br>Biomedical Robotics 1                                                                                 | MI-2<br>Mobile Robots 1     | MI-3<br>Sensor Systems and<br>Sensor Fusion            | MI-4<br>Telerobotics 1                                             | MI-5<br>Localization 1     | MI-6<br>Soft Computing |
| 12.30-13.50 | Lunch                                                                                                         |                             |                                                        |                                                                    |                            |                        |
| 13.50-15.10 | MII-1<br>Biomedical Robotics 2                                                                                | MII-2<br>Mobile Robots 2    | MII-3<br>Sensor Based Planning                         | MII-4<br>Fractional Derivatives in<br>Mechatronics and Robotics 1  | MII-5<br>Localization 2    | MII-6<br>Learning 1    |
| 15.10-15.30 | Coffee Break                                                                                                  |                             |                                                        |                                                                    |                            |                        |
| 15.30-16.50 | MIII-1<br>Networked and<br>Cooperative Rob. 1                                                                 | MIII-2<br>Vision 1          | MIII-3<br>Olfaction-Based Mobile<br>Robot Navigation 1 | MIII-4<br>Fractional Derivatives in<br>Mechatronics and Robotics 2 | MIII-5<br>Localization 3   | MIII-6<br>Learning 2   |
| 16.50-17.00 | Technical Break                                                                                               |                             |                                                        |                                                                    |                            |                        |
| 17.00-18.00 | MIV-1<br>Networked and<br>Cooperative Rob. 2                                                                  | MIV-2<br>Obstacle Avoidance | MIV-3<br>Olfaction-Based Mobile<br>Robot Navigation 2  | MIV-4<br>Telerobotics 2                                            | MIV-5<br>Demining Robotics | MIV-6<br>Kinematics 1  |
| 18.00-19.30 | <b>Visits, Exhibitions &amp; Demos</b>                                                                        |                             |                                                        |                                                                    |                            |                        |
| 19.45       | Welcome Reception                                                                                             |                             |                                                        |                                                                    |                            |                        |

**Tuesday 01 - July - 2003**

|             | Auditorium                                                                                                                             | Amphitheater C.4                         | Room C.1                                            | Room C.2                           | Room C.3                            | Room E.1                             |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| 8.30-9.30   | <b>Plenary Lecture 2: Kazuo Tanie - <i>A New trend of Current Robotics Technology and the Possibility of New Robotics Business</i></b> |                                          |                                                     |                                    |                                     |                                      |
| 9.30-9.35   | Technical Break                                                                                                                        |                                          |                                                     |                                    |                                     |                                      |
| 9.35-10.55  | TI-1<br>Biologically-Inspired/<br>Humanoid Robotics 1                                                                                  | TI-2<br>Mobile Robots 3                  | TI-3<br>Robotic Applications                        | TI-4<br>Humans and Robots 1        | TI-5<br>Motion Planning             | TI-6<br>Multirobot Systems 1         |
| 10.55-11.15 | Coffee Break                                                                                                                           |                                          |                                                     |                                    |                                     |                                      |
| 11.15-12.35 | TII-1<br>Biologically-Inspired/<br>Humanoid Robotics 2                                                                                 | TII-2<br>Mobile Robots 4                 | TII-3<br>Control 1                                  | TII-4<br>Humans and Robots 2       | TII-5<br>Vision-Based<br>Navigation | TII-6<br>Multirobot Systems 2        |
| 12.35-13.50 | Lunch                                                                                                                                  |                                          |                                                     |                                    |                                     |                                      |
| 13.50-15.30 | TIII-1<br>Mobile Robots 5                                                                                                              | TIII-2<br>Medical/Biomedical<br>Robotics | TIII-3<br>Control 2                                 | TIII-4<br>Humans and Robots 3      | TIII-5<br>Vision 2                  | TIII-6<br>Walking Robots             |
| 15.30-15.50 | Coffee Break                                                                                                                           |                                          |                                                     |                                    |                                     |                                      |
| 15.50-17.30 | TIV-1<br>Mobile Robots 6                                                                                                               | TIV-2<br>Rehabilitation Robotics         | TIV-3<br>Multiple Robots in<br>Dynamic Environments | TIV-4<br>Mobile Robots and Sensors | TIV-5<br>Vision 3                   | TIV-6<br>Compliant Motion<br>Control |
| 17.30-19.00 | <b>Visits, Exhibitions &amp; Demos</b>                                                                                                 |                                          |                                                     |                                    |                                     |                                      |

**Wednesday 02 - July - 2003**

|             | Auditorium                                                                                                           | Amphitheater C.4                          | Room C.1                      | Room C.2                                                     | Room C.3                                            | Room E.1                    |
|-------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------|--------------------------------------------------------------|-----------------------------------------------------|-----------------------------|
| 8.15-9.00   | <b>Plenary Lecture 3: Antonio Pascoal - <i>Marine Robots: from theory to practice</i></b>                            |                                           |                               |                                                              |                                                     |                             |
| 9.00-9.05   | Technical Break                                                                                                      |                                           |                               |                                                              |                                                     |                             |
| 9.05-10.45  | WI-1<br>Space and Aerial Robotics                                                                                    | WI-2<br>Robots and Art                    | WI-3<br>Mobile Robots 7       | WI-4<br>Intelligent Vehicles                                 | WI-5<br>Grasping and Hand<br>Design                 | WI-6<br>Adaptive Control 1  |
| 10.45-11.05 | Coffee Break                                                                                                         |                                           |                               |                                                              |                                                     |                             |
| 11.05-12.25 | WII-1<br>Biomorphic Robotics                                                                                         | WII-2<br>Robotic Information<br>Fusion 1  | WII-3<br>Haptic Interfaces 1  | WII-4<br>Robotics Technologies for<br>Intelligent Vehicles 1 | WII-5<br>Cooperative Robotics                       | WII-6<br>Adaptive Control 2 |
| 12.25-13.50 | Lunch                                                                                                                |                                           |                               |                                                              |                                                     |                             |
| 13.50-15.10 | WIII-1<br>Robotics Technologies for<br>Intelligent Vehicles 2                                                        | WIII-2<br>Robotic Information<br>Fusion 2 | WIII-3<br>Haptic Interfaces 2 | WIII-4<br>Biologically-Inspired/<br>Humanoid Robotics 3      | WIII-5<br>Path Planning & Non-<br>Holonomic Systems | WIII-6<br>Fuzzy Control     |
| 15.10-15.30 | Coffee Break                                                                                                         |                                           |                               |                                                              |                                                     |                             |
| 15.30-17.10 | WIV-1<br>Robotics Technologies for<br>Intelligent Vehicles 3                                                         | WIV-2<br>Mobile Robots 8                  | WIV-3<br>Multi-Legged Robots  | WIV-4<br>Parallel Manipulators                               | WIV-5<br>Applications and Task<br>Planning          | WIV-6<br>Kinematics 2       |
| 17.10-17.15 | Technical Break                                                                                                      |                                           |                               |                                                              |                                                     |                             |
| 17.15-18.15 | <b>Plenary Lecture 4: Michel Parent - <i>Cybercars : the future of road transport?</i></b><br><b>Closing Session</b> |                                           |                               |                                                              |                                                     |                             |
| 18.15-19.30 | <b>Exhibition &amp; Demos</b>                                                                                        |                                           |                               |                                                              |                                                     |                             |
| 20.00       | <i>Gala Dinner</i>                                                                                                   |                                           |                               |                                                              |                                                     |                             |

## ICAR 2003 Sessions

| Sessions                                                                |   | Papers |     |     |     |     |
|-------------------------------------------------------------------------|---|--------|-----|-----|-----|-----|
| Adaptive Control                                                        | 1 | 382    | 130 | 108 | 218 | 257 |
|                                                                         | 2 | 292    | 309 | 332 | 15  |     |
| Applications and Task Planning                                          |   | 119    | 34  | 147 | 32  | 70  |
| Biologically-Inspired/Humanoid Robotics                                 | 1 | 133    | 157 | 169 | 238 |     |
|                                                                         | 2 | 211    | 230 | 226 | 88  |     |
|                                                                         | 3 | 341    | 145 | 220 | 357 |     |
| Biomedical Robotics (Special Session 1)                                 | 1 | 181    | 121 | 380 | 236 |     |
|                                                                         | 2 | 254    | 199 | 376 | 320 |     |
| Biomorphic Robotics (Special Session 4)                                 |   | 248    | 255 | 279 | 310 |     |
| Compliant Motion Control                                                |   | 223    | 295 | 94  | 165 | 328 |
| Control                                                                 | 1 | 143    | 373 | 174 | 291 |     |
|                                                                         | 2 | 42     | 24  | 274 | 347 | 113 |
| Cooperative Robotics                                                    |   | 78     | 235 | 253 | 293 |     |
| Demining Robotics                                                       |   | 59     | 321 | 391 |     |     |
| Fractional Derivatives in Mechatronics and Robotics (Special Session 8) | 1 | 49     | 150 | 104 | 93  |     |
|                                                                         | 2 | 95     | 348 | 375 | 308 |     |
| Fuzzy Control                                                           |   | 315    | 167 | 219 | 264 |     |
| Grasping and Hand Design                                                |   | 206    | 136 | 215 | 26  | 196 |
| Haptic Interfaces                                                       | 1 | 343    | 91  | 101 | 107 |     |
|                                                                         | 2 | 125    | 336 | 227 |     |     |
| Humans and Robots                                                       | 1 | 68     | 204 | 178 |     |     |
|                                                                         | 2 | 61     | 205 | 224 | 69  |     |
|                                                                         | 3 | 280    | 299 | 314 | 324 | 370 |
| Intelligent Vehicles                                                    |   | 155    | 346 | 316 | 360 | 267 |
| Kinematics                                                              | 1 | 35     | 158 | 374 |     |     |
|                                                                         | 2 | 38     | 311 | 232 | 134 | 381 |
| Learning                                                                | 1 | 393    | 191 | 197 | 225 |     |
|                                                                         | 2 | 262    | 268 | 282 | 353 |     |
| Localization                                                            | 1 | 87     | 129 | 131 | 156 | 182 |
|                                                                         | 2 | 210    | 217 | 246 | 290 |     |
|                                                                         | 3 | 364    | 301 | 213 | 186 |     |
| Medical/Biomedical Robotics                                             |   | 118    | 40  | 66  | 201 |     |
| Mobile Robots                                                           | 1 | 317    | 18  | 132 | 86  | 162 |
|                                                                         | 2 | 395    | 33  | 190 | 58  |     |
|                                                                         | 3 | 166    | 117 | 307 | 239 |     |
|                                                                         | 4 | 323    | 160 | 46  | 330 |     |
|                                                                         | 5 | 259    | 164 | 187 | 244 | 56  |
|                                                                         | 6 | 151    | 122 | 159 | 149 | 111 |
|                                                                         | 7 | 273    | 188 | 272 | 305 | 127 |
|                                                                         | 8 | 306    | 163 | 304 | 64  | 109 |
| Mobile Robots and Sensors                                               |   | 21     | 183 | 250 | 326 |     |
| Motion Planning                                                         |   | 396    | 28  | 60  | 216 |     |
| Multi-Legged Robots (Special Session 2)                                 |   | 161    | 397 | 338 | 371 | 222 |
| Multiple Robots in Dynamic Environments (Special Session 3)             |   | 100    | 300 | 313 | 344 | 367 |
| Multirobot Systems                                                      | 1 | 233    | 67  | 99  | 110 |     |
|                                                                         | 2 | 50     | 37  | 105 | 358 |     |
| Networked and Cooperative Robotics (Special Session 7)                  | 1 | 137    | 170 | 193 | 245 |     |
|                                                                         | 2 | 286    | 322 | 329 |     |     |
| Obstacle Avoidance                                                      |   | 27     | 141 | 241 |     |     |
| Olfaction-Based Mobile Robot Navigation (Special Session 10)            | 1 | 386    | 240 | 387 |     |     |
|                                                                         | 2 | 389    | 390 | 388 |     |     |
| Parallel Manipulators                                                   |   | 17     | 139 | 140 | 231 | 383 |
| Path Planning & Non-Holonomic Systems                                   |   | 284    | 319 | 12  | 266 |     |
| Rehabilitation Robotics                                                 |   | 195    | 277 | 275 | 177 | 276 |

|                                                                       |   |     |     |     |     |     |
|-----------------------------------------------------------------------|---|-----|-----|-----|-----|-----|
| Robotic Applications                                                  |   | 92  | 96  | 172 | 331 |     |
| Robotic Information Fusion (Special Session 9)                        | 1 | 192 | 194 | 228 |     |     |
|                                                                       | 2 | 294 | 369 | 283 |     |     |
| Robotics Technologies for Intelligent Vehicles<br>(Special Session 5) | 1 | 366 | 31  | 39  | 55  |     |
|                                                                       | 2 | 112 | 16  | 79  | 43  |     |
|                                                                       | 3 | 114 | 144 | 337 | 48  | 392 |
| Robots and Art (Special Session 6)                                    |   | 71  | 153 | 269 | 334 |     |
| Sensor Based Planning                                                 |   | 57  | 168 | 175 | 207 |     |
| Sensor Systems and Sensor Fusion                                      |   | 242 | 256 | 261 | 135 | 258 |
| Soft Computing                                                        |   | 41  | 394 | 251 | 312 |     |
| Space and Aerial Robotics                                             |   | 80  | 208 | 296 | 351 | 339 |
| Telerobotics                                                          | 1 | 13  | 179 | 126 | 243 | 345 |
|                                                                       | 2 | 44  | 47  | 81  |     |     |
| Walking Robots                                                        |   | 2   | 52  | 103 | 200 | 327 |
| Vision                                                                | 1 | 298 | 325 | 45  | 173 |     |
|                                                                       | 2 | 7   | 116 | 146 | 198 | 379 |
|                                                                       | 3 | 362 | 352 | 72  | 260 | 285 |
| Vision-Based Navigation                                               |   | 29  | 51  | 229 | 237 |     |