

# FM02

## Poster Session

13:30-15:30

Room : Base 2nd Floor-Zillertal

Chair1 : Tae-Jung Lho ( Tongmyoung Univ., Korea)

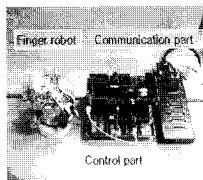
Chair2 :

FM02-19

### Implementation and Motion Control of Three Linkage Bar Fingers

seul jung, jeonggu kim, sungsu kim(Chungnam Nat'l Univ., KO-REA)

- Robot fingers
- Kinematics and dynamics of robot fingers
- 3 bar linkages
- Microprocessor controller
- Serial communication
- Simulation studies



FM02-20

### A Study On a Lane Keeping Control in a Curved Road and Lane Changing Method to Avoid Collision of a Vehicle

seungchul Lee, Kwangsuck Boo, Jeonghoon Song(Inje Univ., KO-REA)

The objective of this study is to propose a lane changing and keeping method on a curved road for an automatic guidance of a vehicle. It is well known that the speed control of a vehicle in a curved road is essential in terms of vehicle stability and passenger safety because centrifugal force makes a vehicle to be on out of lane. And it is also natural to avoid the collision with other cars or obstructions with keeping the stability and drivability. The vehicle pose and the road curvature were calculated by geometrically fusing sensor data from camera image, tachometer and steering wheel encoder though the Perception Net in which not only the state variables, but also the corresponding uncer...

FM02-21

### Indoor Navigation for the mobile robot

Woo Young Lee, Deijeung Huh, Ukyoul Huh(Inha Univ., KOREA.), Hakil Kim(Inha Univ., KOREA)

1. Introduction
2. Wall following
3. Obstacle Avoidance
4. Experimental Results
5. Conclusion

FM02-22

### Gait Pattern Generation Algorithm for a Biped Robot with Toes

Kwan Sik Min, Cheol Ki Ahn, Min Cheol Lee(Pusan Nat'l Univ., KO-REA)

One of the most important functions of a biped robot is to walk naturally like human. For the human being, toe is very important joint in order to walk naturally. Thus, for a biped robot, the existence of toe joint much affects gait pattern generation and contributes to natural walking, which is similar to the human gait or faster walking like running. Since a conventional biped robot has the feet which consist of soles without toes, it seems difficult to walk naturally. For realizing the gait to be similar to human one, toes are necessary to the biped robot. In this paper, the effect of the toe joint for gait pattern generation is studied. In order to find the effect of toe joint, a biped r...

FM02-23

### Manipulability Analysis of a New Parallel Rolling Mill Based upon Two Stewart Platforms

Jun-Ho Lee, Keum-Shik Hong(Pusan Nat'l Univ., KOREA)

In this paper, a kinematic optimal design of a new parallel-type rolling mill based upon two Stewart platforms manipulator is investigated. The objective of this new parallel-type rolling mill is to permit an integrated control of the strip thickness, strip shape, pair crossing angle, uniform wear of the rolls, and tension of the strip. A manipulability measure, as the ratio of the manipulability ellipsoid volume and the condition number of a split Jacobian matrix, is defined. Two kinematic parameters, the radius of the base and the angle between two neighboring joints, are optimally designed by maximizing the global manipulability measure in the entire workspace.

FM02-24

### Synthetic feedback information construction to control a Networked Robot

Soon-Hyuk Hong, Jae Wook Jeon(Sungkyunkwan Univ., KOREA)

- An autonomous mobile robot was controlled through the Internet.
- For the direct control, the feedback data should be provided properly.
- Therefore, an efficient communication scheme should be defined.
- To overcome the transmission delay, the highly abstracted message format was used.
- As the feedback data, the real image sequences may suffer the transmission delay or loss of content.
- To resolve this, the feature information was used to construct the synthetic feedback information.
- By doing this, the operator could feel the hands-on control with an Internet-based robot.

