Computer Pointer Controller – UML Sequence Diagram

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Actors/Objects: user, :main, :input_feeder, :FaceDetection, :FacialLandmarks, :HeadPoseEstimation, :GazeEstimation, :MouseController

- user → :main : activate the main.py
- :main → :input_feeder : start the pipeline
- :input_feeder → :FaceDetection : send a frame
- :FaceDetection ⇢ :main : if detection: its coordinates, frame with detection, cropped frame with detection (else go to next frame)
- :main → :FacialLandmarks : forward cropped face frame
- :FacialLandmarks ⇢ :main : coordinates of left & right eyes; left & right eyes' cropped frames
- :main → user : update statistics & view
- :main → :HeadPoseEstimation : forward cropped face frame
- :HeadPoseEstimation ⇢ :main : head's angles (pitch, yaw, roll)
- :main → user : update statistics & view
- :main → :GazeEstimation : forward left & right eyes' cropped frames; head's angles
- :GazeEstimation ⇢ :main : x-y-z axis coordinates
- :main → user : update statistics & view
- :main → :MouseController : send x-y coordinates from gaze
- :MouseController → :main : send mouse pointer move's statistics
- :main → user : update statistics
- :MouseController ⇢ user : impact the movement of user's mouse pointer