you can use the algorithm of Lucas-Canada. We find the face due to the algorithm and then determine the specific points in it. Using points according to the algorithm of Lucas-Canada; after their disappearance we consider that face disappeared from view. Having characteristic features of the face, they can be compared with the features laid down in the database.

To smooth the path of the object (s), as well as to predict its position in the next frame a Kalman filter can be used. Here it should be noted that the Kalman filter is for linear motion models. For the nonlinear algorithm Particle Filter is used (alternatively Particle Filter + algorithm Mean Shift). The background subtraction algorithms library can also be used with examples of implementation of algorithms for subtraction of the background paper on the implementation of + light background subtraction algorithm ViBe. In Addition, do not forget one of the most common methods of Viola-Jones, implemented in computer vision library OpenCV.

Simple face recognition is good, but not enough. It is also necessary to ensure a stable tracking of multiple objects in a scene, their joint intersection or temporary "disappearance" of the barrier, consider any number of objects that cross a certain area and take into account the direction of the intersection. Video analytics is painstaking process that requires a high level of technology provision but it also makes our life simpler and safer.

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PECULIARITIES OF TRANSPORT ALGORITHM IN POLITICAL CRISIS

Transport algorithm is a problem of optimal transportation plan for the product. In our case, by product we mean thecarriage of passengers from point of origin to pointof destination or to items that are target arrival. The purpose of the transport algorithm is the use of optimal schemes of cargo flows that reduce the cost of transportation.

Currently, when it is difficult forUkrainians to get a direct flight to Russia, our transport algorithm can solve this problem. By using the transport algorithm,we can find optimal variant of going to Russia via other countries with minimaltransfers, loss of time, as well as consider the options and choose the one that would be the cheapest and the most comfortable and avoidproblems that are arising now under ATO circumstances.

Thus, the purpose of the transportation problem would be to use the best flights schemes that would reduce the cost of time, money, connections and problems in flight.

Let us assume that passengers fly from$m$points$a_1, a_2, \dots, a_m$,to Russia in to the airport n , $b_1, b_2, \dots, b_n$.

The cost of flight from point a to point b denotesc_{ij} (i = 1,2, ..., m; j = 1,2, ..., n). The amount of time to fly from point a to point $b$denotesy_{ij}(i = 1,2, ..., m; j = 1,2, ..., n).

We need to make a flight plan, in which the cost of the flight and time spent on flights will be minimal.

Variables (unknown) of transportation problem arex_{ij} (I = 1,...,m; i = 1,2,...,n) – the number of transfers from point a to point b, that affect the cost and time spent on flight . These variables can be written in atransport matrix:

$$X = \begin{bmatrix} x_{11}x_{12} \dots x_{1n} \\ x_{21}x_{22} \dots x_{2n} \\ \dots\dots\dots\dots\dots\dots \\ x_{m1}x_{m2} \dots x_{mn} \end{bmatrix}.$$

Mathematical model of the transport problem in general will look like:

$$Z_1(x) = \sum_{i=1}^{m} \sum_{j=1}^{n} c_{ij}\, x_{ij} \to min, (1)$$

$$Z_2(x) = \sum_{i=1}^{m} \sum_{j=1}^{n} y_{ij}\, x_{ij} \to min, (2)$$

$$\sum_{j=1}^{n} x_{ij} = a_i, \text{ i = 1,2, ..., m, (3)}$$

$$\sum_{i=1}^{m} x_{ij} = b_j, \text{ j = 1,2, ..., n, (4)}$$

$$x_{ij} \geq 0, \text{ i = 1,2, ..., m; j = 1,2, ..., n. (5)}$$

The objective function of (1) expresses the requirement to provide a minimum total cost of the flight. The second objective function of (2) expresses the requirement to provide a minimum amount of time on the flight. The first group of m equations (3) describes the fact that from all$m$ points offlight passengers must take off. The second group of n equations (4) expresses the requirements for the arrival of the passengers. Inequalities (5) are inseparable elements of all variable of this assignment.

Thus, the mathematical formulation of the transportation problem is: find any variables$X = (x_{ij})$, i = 1,2, ..., m; j = 1,2, ..., n,that satisfy the system constraints (3), (4) the conditions are inseparable (5) and provide a minimum objective functions (1), (2).

In this problem, one objective function is not enough, because we plan to achieve optimality as to reduce the amount of time and money. So having two objective functions, you can use multifactor optimization – the process of simultaneous optimization of two or more target functions in a given domain of a method of lexicographic optimization. If time is more important than money, minimization is held withone criterion, and the second is introduced as a limiting one or vice versa.

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